

THE

Desert

MAGAZINE



APRIL, 1944

25 CENTS



OCOTILLO

By WENDELL HASTINGS
El Centro, California

I grew beside a castle wall,
And heard each day the clash of arms.
My roots were fed with dregs of wine
Where soldiers rough let goblet fall.
My many thorns my only charms,
My soul as black as Dead Sea brine.

One day a hand as hard as horn
Plucked me from my sodden bed
And wove my strands into a crown,
A thing of ridicule and scorn,
To thrust upon some rascal's head;
My poison fangs in blood to drown.

Upon that Head they prest me down,
The blood sprang out to meet my thorn
And trickled down that patient face.
Then I knew no thieving clown,
But He to better crown was born
Who wore the symbol of disgrace.

Now as I grow beside the track,
And watch men struggle on and on,
A crown I wear upon my head;
And now, my soul, no longer black,
But purified by One now gone,
Worships beneath my chaptered red.

MOONSET ON THE PANAMINTS

By MARCUS Z. LYTHE
San Diego, California

The cinders of the dying night
Burn on the Panamints at dawn;
A few sparks kindle in the snow,
Then moonset, and the fire is gone.

Flower of a Night

By ANNIE DOLMAN INSKEEP
Redlands, California

Last night the cereus opened with its bud
As brilliant moonlight silvered all the strand
And saw our grief dashed on life's shore at flood
And prostrate lie on barren swirling sand.
Beloved babe, whose stay was like that bloom
Of but a night, could we have faith to feel
This radiant life will reach down through the
gloom
And to our breaking hearts some hope reveal?

At dawn we knew this brief and tragic flight
Had lit a star to guide us on our way,
Lest stumbling in the long and tear-stained night
We should forget, while filled with dire dismay,
Though all too short this dear one's earthly
span,
His stay was measured by the Eternal Plan.

DESERT LURE

By E. LESTER
Flagstaff, Arizona

When the war is over
I will no longer be
In distant, foreign land,
The desert's calling me!
I will seek quail's cover,
All the night I will lie
Under clear desert sky,
Dream 'neath some verde tree
Yellow blossoms adrift over me,
My pillow endless sand—
Blankets be-jeweled wait me there—
Stars—diamonds in Circe's hair!

THE CANDLES OF THE LORD

By RUBY ROLLINS
Lincoln Acres, California

On far altars of the hills,
Stand desert tapers tall and white,
Awaiting the magic of the sun
To touch them into light.

While slow seasons crept along,
Earth held them close within her mold,
Patiently biding the mark of time,
God's planning to unfold.

To the desert's ritual,
Ushering in the spring,
The snow-white Candles of the Lord,
Transcendent beauty bring.

Lighting up the hills and valleys,
With a radiance sublime,
Spreading forth the Easter message—
God's miracle—divine!

WEATHER REPORT

By LOUISE SPRENGER AMES
Mecca, California

There are little islands of stillness
In the Mother Desert's heart.
They stand out in the silence,
Vacuous and apart,
Tight with a bleak loneliness.
Windswept, clean and bare,
For tall sons of the Desert
One by one have gone from there.
In the dunes where they dreamed or hunted
Little echoes of laughter still ring,
But the Desert's heart is heavy—
She weeps easily this spring.

DESERT Close-Ups

• Randall Henderson, Desert's Editor-on-leave, at last has his wish—to be stationed in the "middle of the Sahara." Of all news from home he says best is that the rain gods are assuring our Southwest desert an abundance of wild flowers for March and April. He writes to all his desert friends, "I will miss the wild-flower parade this year—and so will you, unless you happen to live in the favored area. But we can find solace in the thought that a heavy flowering season leaves the sand filled with billions of tiny seeds—and let's hope we'll both be there when the flowering season comes again—as it surely will."

• In honor of spring and especially because few of us will see the desert wild-flowers, John Blackford this month describes eight of the general types of floral landscapes found in the Southwest; Mary Beal features one of the daintiest and showiest of the desert annuals—the Gilia, and Jerry Lauderlilk gives the practical uses of desert flowers and shrubs, as discovered by Indians and Spanish-Americans.

• Alfred Morang who illustrated this month's story of the Penitente Brotherhood of New Mexico, written by Susan Elva Dorr, has done illustrating for Erskine Caldwell, a book of poems by John Poda and a book of Joseph Hoffman's poems to be published this spring. He also has illustrated his own stories, has paintings and etchings in museums and many private collections.

• For those who want more information about the Penitente Brotherhood, three books are here recommended. Charles F. Lummis, first American to give a detailed account of their Easter rites and to photograph a part of them, describes the ceremonies, gives variations as they occur in different communities and recounts historical background, in his book "The Land of Poco Tiempo" published in 1893, reprinted in 1928.

• One of the best modern studies of the Penitentes is Alice Corbin Henderson's "Brothers of Light," published in 1937. Includes eyewitness account of rites, historical background, reasons for survival of the sect. Strikingly illustrated. "Santos, The Religious Folk Art of New Mexico" by Mitchell A. Wilder and Edgar Breitenbach, published in 1943, is a carefully documented survey of painting and sculpture of Spanish-American farmers of Rio Grande valley during 18th and 19th centuries, including a specific review of the art of the Penitentes.

CREED OF THE DESERT

By JUNE LE MERT PAXTON
Yucca Valley, California

Why sit in gloom and glum dismay
Because much rain has come this way?
Wild flowers will spread a rare display
To pay for every rainy day!



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PENITENTE CROSS near Taos, New Mexico. Photo by H. Cady Wells, Santa Fe, New Mexico.

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One of the strangest of all Passion plays still may be seen in small mountain communities of New Mexico. It is a survival of the act of atonement through physical suffering, a custom which has been traced as far back as the days of the ancient Egyptians and the Spartans. It persisted through the Middle Ages of Europe and was brought to Mexico from Spain after the conquest, and finally to New Mexico in the latter 16th century. Despite Mexican expulsion of the Spanish Franciscans in 1828, the objections of Bishop Lamy and his French priests in 1850 and the present disapproval of the Catholic

Church, the Penitente Brotherhood continues its rites of self-torture. Although it is the Easter rites which have made the Penitentes conspicuous outside New Mexico, they carry on throughout the year the benevolent duties typical of many fraternal organizations. This too is a survival from early Franciscan days. After the padres were driven out, the members of the brotherhood performed not only the religious rites but also the secular acts of charity and general welfare which the Franciscans had initiated.

Pagan Easter in New Mexico

By SUSAN ELVA DORR

Photos courtesy of Taylor Museum, Colorado Springs, Colorado
Drawings by Alfred Morang, Santa Fe, New Mexico

"*L*ISTEN—I can hear them now," Mrs. Martinez said in an undertone. "Push back into the shadow so we won't be seen! The Brotherhood told me I might bring you if we would not make ourselves too prominent, and would leave our cameras at home."

As the shadows outlined us against the newly leafing trees, the thin wailing notes of the flute, or *pito*, came nearer. I shivered, more from the piercing sound than the cold, although it was early spring and there still were patches of snow on the ground.

My friend, who belongs to one of the old Spanish families in New Mexico, wanted me to see the Easter ceremony of the Penitentes, a sect that still practices rites that have their source in the Middle Ages. So we had driven north from Santa Fe into the mountains to Córdova, a small village that seems like an isolated remnant from the remoteness of old Spain.

It was ten o'clock on Good Friday morning. We had left our car and now stood in the shade of the trees, waiting. Mrs. Martinez had told me that the Crucifixion would not take place until noon. So I leaned against the bare trunk of a pine and prepared to wait. I must have dropped into a doze. My mind was filled with fragments of racial memories and the pagan background that hovers behind the veneer of so-called modern life.

I had been eager to see the *Hermanos de la Luz*, as they call themselves—Brothers of Light—perform their ceremonies, and I was delighted when Mrs. Martinez had asked me to go. She did not belong to the Brotherhood but she was much in sympathy with them. She told me that her brother joined the Order years ago and had been faithful to it until his death.

She jostled my arm. "Here they come," she whispered. "Look and see all you can!"

Coming towards us down the road was an uneven line of half-naked men. They were swaying and staggering under the

heavy wooden crosses they bore on their naked shoulders, which were blue from the weight and the cold. Others closely followed, lashing themselves with whips made from braided yucca. As the lashes fell, blood ran from bare bruised flesh. These were the Penitentes or Flagellants making their Lenten pilgrimage.

The *Rezador*—leader—walked ahead reading and then chanting from the book he carried in his hands. His voice rose, clinging to mad heights of sound. With the shuffle of feet and the sickening impact of lashes on flesh came the notes of the *pito* piercing, shrill, like the cry of the doomed. The sound joined with the wind that rose above it, making a weird background for muttering voices and gasps of pain.

After the procession had passed I saw bright red spots left on the white snow. I began to think about this pageant that reached back along the trails of history. I had read that the pilgrimage of pain is a public atonement for sin committed throughout the year, a custom so old that its beginnings are lost in the fog of time. Snow or rain or crashing thunder does not prevent these seekers after purification from their self-imposed flagellation at Easter.

As we followed the procession we noticed that one of the men wore buckhorn, or rattlesnake cactus, bound over his back and chest, and his arms were folded tightly to press the spines deeper. The faces of many of the men were covered with a black cowl or mask. They looked like shapes painted by primitive masters, possessing the forms of men but inhabited by souls of earth-bound spirits. As the long line of flagellants passed, I saw their white faces—stern, with a far-away hypnotic look in their eyes.

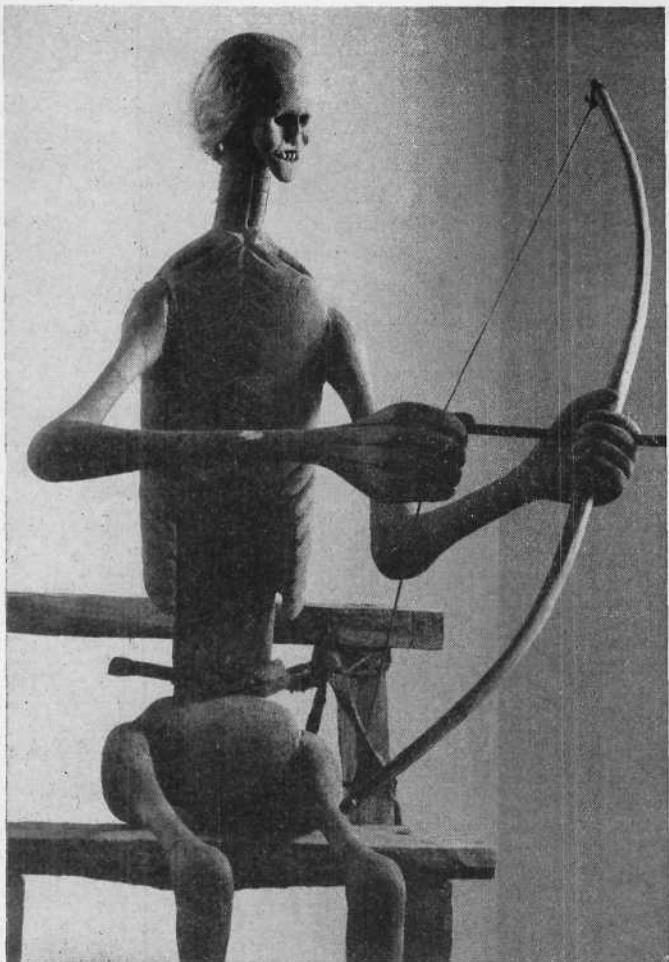
"Sh-h! Don't speak!" Mrs. Martinez said, as she pulled my arm. "We will keep well in the shadows of the buildings along the way. You see," she continued, "the Brotherhood are reticent. They do not like curious tourists watching them."

"Yes," I said, looking up at the ever-blue sky and thinking it was almost noon. "I realize that some of us Anglo-Americans often are crude in our remarks about an alien pageant which we fail to understand."

"These Anglos you speak of," Mrs. Martinez said, "have often brought their cameras. One man was almost killed when he was caught taking pictures. He was pushed down the mountain side with a shower of stones following. The Brotherhood want to keep this ancient ceremony intact."

"There goes Gabriel's son—he is a new member. I can tell him by his bare legs and feet. I've often bound up that big toe

"Coming towards us down the road was an uneven line of half-naked men. They were swaying and staggering under the heavy wooden crosses they bore on their naked shoulders, which were blue from the weight and the cold... The crosses made strange forms against the moon-drenched snow and the wild pito notes of the flute player were like the voices of the damned pleading for release... After the procession had passed I saw bright red spots left on the white snow."



Close-up of the Muerte riding in the Death Cart. Height of cart with figure 51 inches, length 60 inches, width 36 inches. Photograph by Laura Gilpin.

of his when he used to stub it as a little boy. You see, he and my son are about the same age."

The line of men now turned towards the *Morada*, or adobe chapel, topping a nearby hill. It looked like a camp in the woods, for there were no windows. I had been told, however, that some of the larger *Moradas* had one or two very small panes of glass, and I thought of the dark places where the first followers of Christ had worshipped.

It was almost time for the Crucifixion and I could see that Mrs. Martinez was a little worried for fear I would not understand. So she told me that these people were her neighbors and friends—"And just like any other people except that they believe in the yearly penance. I knew a man," Mrs. Martinez smiled, "who had stolen a cow and her calf. He felt that his punishment should be severe, so he slashed broken glass across his stomach until the flesh was torn to ribbons but . . ." and I could hardly hear her whisper, "the pain would not keep him from doing it again if he wanted to."

As I looked around I could see many wagons filled with peo-

The Death Cart is pulled in the procession by one of the Penitentes as an extreme penalty. The heavy wooden wheels do not turn. The rough path may cause the arrow to be discharged. If it strikes one of the Brothers, he is chosen to be crucified. Wooden pegs and thongs of hide are used for joining. This cart, used in the Cordova rites, is believed to have been made by the grandfather of the late José Lopez of Cordova in the middle of the 19th century. The grandson and son, both carpenters, were the noted santero makers of Cordova.

ple from over the hills who had hitched their horses like New Englanders going to a fair. They mingled with the young people in their bright colors and with those of the black-shawled generation, and all helped to lengthen the procession.

The rhythmic slap of the whip upon bare shoulders blended with the clanking of chains on the ankles of the marchers. The white cotton drawers were wet with crimson spots that grew larger as I watched, and the cross bearers—each with an initiate by his side singing responses to the chanted verses of the leader—were like ghosts materialized to enact the Passion of the Christ.

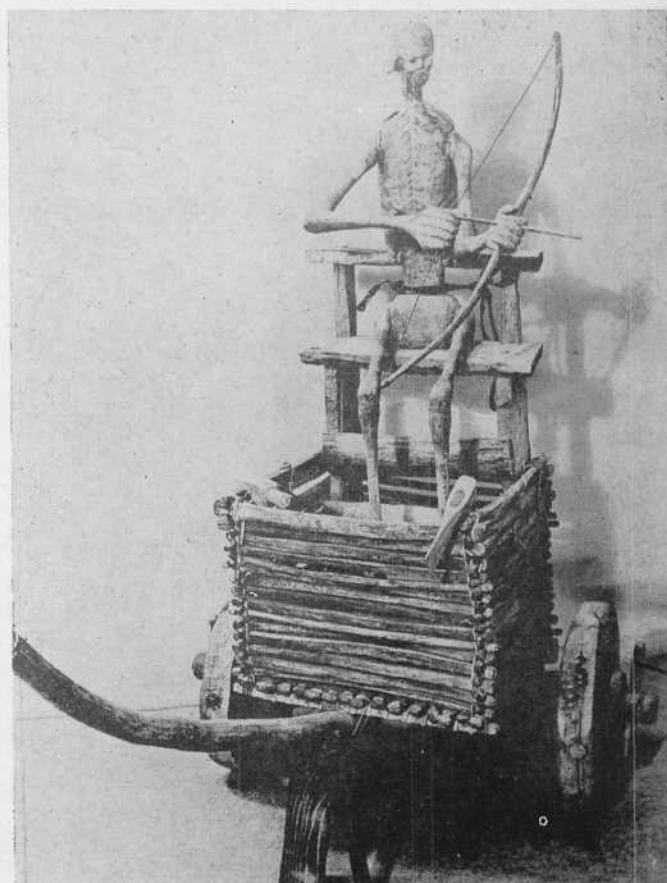
"It is just high noon," Mrs. Martinez whispered. "It is just the time when all parish churches commemorate Christ's Gethsemane and Agony on the Cross. We will stand near the door and watch."

Soon one of the *Hermanos* came from the chapel. He carried a large cross with a *Cristo* in red fastened upon it. And after that, came another cross, bearing a living figure. The face was covered by a cowl which hid the features like a shadow of doom. Three men implanted the end of the cross in the earth.

The crowd watched with bated breath. Mrs. Martinez took my arm. The minutes that we waited seemed an eternity. I counted 15 by my watch before I felt a stir from one of the leaders, who saw that the head was beginning to slump sideways. But it was full five minutes more before the figure of atonement gave up.

The crowd relaxed. The Brothers quickly lowered the cross and carried it gently into the *Morada*, there to bathe and revive the anguished Brother who had paid the penalty for his Order. Those kneeling at the foot of the cross followed with heads bent, chanting in low tones. The sound faded into an echo as the heavy door closed.

After lunch we mingled with the people and I began to understand more of their feelings concerning this Easter pageant. Mrs. Tapia, a friend of Mrs. Martinez', took us into her home. There we rested and chatted about the coming crops and water supply. We wondered if the cold spring would hurt the apple



and pear blossoms which are lovely in this little town, and in the valley of Chimayo, just below.

Mrs. Tapia urged us to remain for the last of the ceremony of Good Friday—the *Tinieblas*. She explained that this was symbolic of the earthquake which rent the land after Christ's entombment—also the darkness and Purgatory, showing why prayers are said for the damned.

We went out into the moonlight to watch. Mrs. Martinez touched my sleeve. "There," she whispered, "see all those white-trousered boys with swinging lanterns? Well, they are initiates to the Order. There goes Miguel—I'd know his walk anywhere, even though he is bending over. He and my boy are always having scraps, then they end by eating cookies together."

Mrs. Martinez placed her lips close to my ear. "My Church has tried to stop these people from this pilgrimage. It has partially succeeded, but not quite, and I don't believe it ever will. Of course these hill people are all Catholics and they receive the Sacraments, but the Church doesn't approve of flagellation—it is trying to divert this great faith and religious fervor into a different channel."

A procession had formed while we were talking, and now it moved towards the hill. The great heavy crosses carried by the Brothers made strange forms against the moon-drenched snow and the wild *pito* notes were like the voices of the damned pleading for release. In the moonlight the blood on the backs of the men shone like dark shadows on crouching animals. At last one cross-bearer staggered, trembled, and finally fell to the earth. While he lay there others came by and lashed the prostrate figure which groaned and moaned and struggled to rise, but the blows fell with awful regularity.

As we lagged behind the procession my mind ran back over the pages of history. I remembered that the Egyptians flogged themselves before the goddess Isis, that the boys of Sparta were whipped before the altar of their gods. Saint Anthony of Padua, in 1210, founded the first fraternity of the whip for public eyes, and the custom then spread to many of the countries of Europe. I also remembered that Don Juan de Oñate, one of the early colonizers who came to New Mexico with the Franciscan friars, performed the first public penance in 1598 with his soldiers and priests.

Mortifying the flesh seems to be a basic element in the human race. It is little wonder then that the cult should survive among a people living in the isolated territory of New Mexico amid a world of eroded land that takes on the form of abandoned cities, and where the color of the landscape would satisfy the heart of the most ardent expressionist.

As we neared the *Morada* I was confronted by the *Carreta del Muerto*—the Cart of Death. In it was such a realistic figure that I shuddered, expecting the arrow to dislodge and strike me. After

The Morada is symbolic of the Penitente faith. It is primitive and close to the soil—it literally is part of the soil, being made of adobe. It often is built on a hill top. Usually there is no opening except the low door through which little light invades the gloomy interior. Prevailing mood within possesses a strange near-barbaric beauty. There are santos, a rude table, benches along the walls. There is an inner room where ritual items such as whips, chains and death cart are kept. To the Penitentes it serves as both church and lodge room.



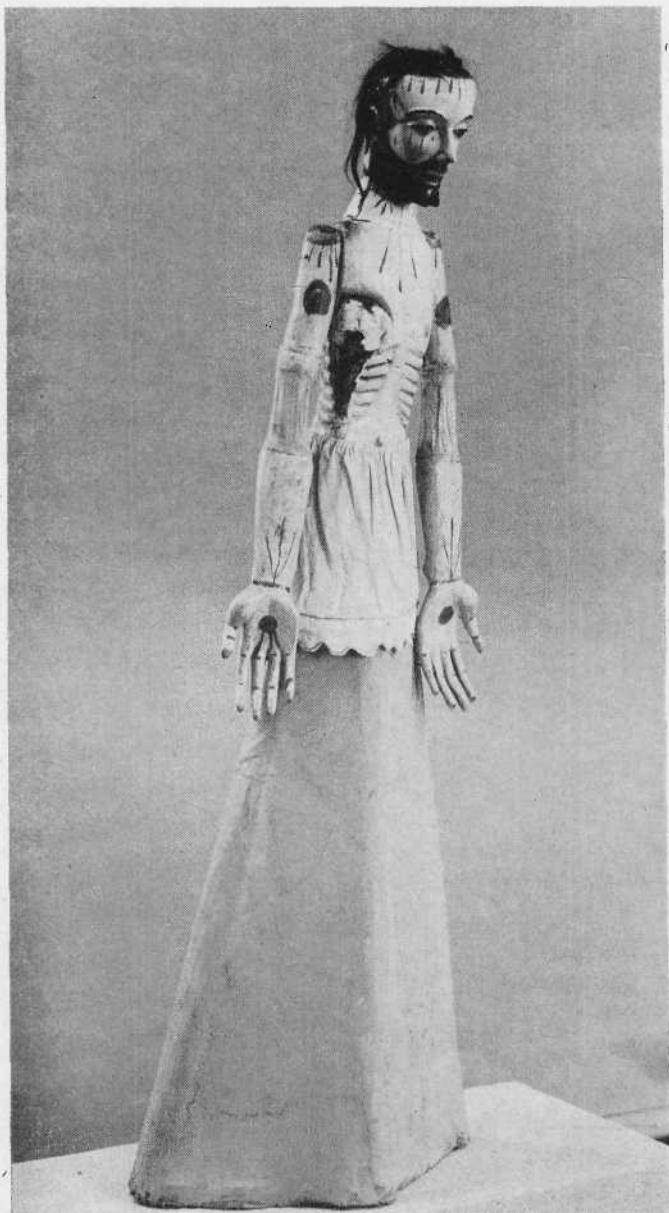
I realized that it was made of wood I examined it. Standing on heavy wheels that did not turn, it looked like an ox-cart. The figure of death, wood-carved, sat in the bulky vehicle. The eyes were wide open and staring, the face was chalk-white.

Mrs. Martinez moved closer to me. "I'll explain," she whispered. "The figure is holding a drawn bow, with an arrow fitted to the string, and when the cart is pulled over these rutty roads the arrow will be dislodged, and if it strikes a Penitente he will be crucified. You see, the one who drags the cart, performs an extreme penalty, for the coarse horse-hair rope over his shoulders and under his arm pits, cut deep gashes into his flesh. He pulls the cart by main strength, for the wheels do not move." Mrs. Martinez turned up the collar of my coat, as the night was cold, and I was shivering.

"It all flavors of the old Mystery and Morality plays," I said in a low voice. "When I was in Spain I saw paintings of the Dances of Death, and what we are seeing now might have come from some of them."

Sobs and weird singing and humming could be heard as the procession poured into the *Morada*. The hymns and the music reminded me of the Gregorian chants, with the addition of a

Figure of the Nazarene Christ, typical of those used at Cordova and Chimayo in the Easter rites. Height 45½ inches. base 17½ by 10 inches.



wild primitive strain. Someone has recorded that there are notes like the *saeta*, or arrow song of Seville, perhaps of Moorish origin, reminiscent of 13th century Spain.

Just then I was startled by eerie singing coming from a distance. I turned in that direction. The voice came from a shadowy figure on the *Calvario* crouched under the cross on the hill not far from the *Morada*.

"Sometimes individual Penitentes," whispered Mrs. Martinez, "are moved to cry aloud and alone their sins to the wind and the stars."

We moved towards the *Morada* with the crowd. Through the doorway we saw women kneeling in the little chapel, and as the Penitentes entered more women and children joined them. The long line, now hushed and sobbing, made a wild dramatic scene. Outside in the yard many knelt by the large cross that rose like a huge finger pointing towards the moonlit sky. One Brother fainted and blood oozed from his side.

I groaned. Mrs. Martinez put her arm around me. "Remember," she whispered, "they are expressing their faith—the faith of our Lord Jesus when he was Crucified. We will go into the *Morada* where you can sit down."

The only light in the chapel came from the candles on the small improvised altar, on which were grouped the *Santos*. I could make out the image of the Virgin and Child. Some of this ecclesiastical art had been brought from Mexico and Spain. But in later years the native craftsmen—the *Santeros*, or saint makers—reinvested the old ideas of the saints with their own imaginations. I had seen some of these carvings in the church at Ranchos de Taos.

I watched the glow of candlelight on the faces of some of the Brothers who had crouched on the benches and around the little altar. They were all waiting, utterly absorbed in the devotions. At the signal for silence the *Hermano Mayor* commenced the ritual. At the end of each stanza a few bars of Ave Maria or a Miserere were sung, and two leaders who sat close to the candles would pinch out the light. The gaunt faces faded in the failing light until only the bulk of the forms remained. Shapes, that to my tense imagination, became figures from some pagan rite, performed within a mystic grove, dedicated to the worship of gods far removed from Christianity.

The last candle flickered out and we were in total darkness. The *pito* screamed. The lashes fell madly. Screeches in the dark . . . chains clanking . . . the earth seemed to open as if purgatory were spewing out its tormented souls.

Never had I experienced such agony. I could not move. I was wedged in, and I felt faint. I groaned and fumbled for Mrs. Martinez' hand. She pulled me back on the bench so I could relax, and she began a prayer on her rosary. "This is the great climax," she whispered. "Our Lord passed through it all. Surely we can look upon its dramatization by these faithful ones."

This was the *Tinieblas*—The Shadow! The Earthquake! When the heavens grew dark and the land gasped from terror!

I was thankful when the door opened and the stench of blood and body odor that had filled my nostrils was replaced by the cold fresh air of the mountain.

As we drove towards Santa Fe, Mrs. Martinez told me that every community had a different ritual, in its details. Some had more singing—long narrative hymns which told the whole story of Christ's sufferings before Pilate, to His entombment, and many of the *Tinieblas* were more intense than this one had been.

As I looked out of the car window at the range of Sangre de Cristo (Blood of Christ), the moon shone over patches of snow on the mountains. I began to understand the faith of these people, and also that this pageant down through the centuries had been an escape for them. Their world was not our modern world of doubt. During Holy Week, the people of these little mountain towns had returned to the primitive world of Faith.

LETTERS..

Desert in North Africa . . .

c/o Postmaster, New York City

Dear Editor:

I have just received my first copy of Desert over here in the North African-European war front. I surely was glad to get it—haven't had a chance to read it for a year and a half. But those copies are at home and I will have them all to read when I get back. I think I enjoy Desert over here even more than I did at home. Wish I could take some kodachromes over here. Good luck to Desert—and keep them coming.

C. DELMER JEANS

Don't Ration Desert Magazine . . .

Norwalk, Ohio

Desert Magazine:

Sugar, gasoline and shoes are rationed—this I can take with a smile. But if D.M. were taken away from me, I certainly would squawk. For without sugar I can be sweetened up by reading D.M. Without gasoline, I can stay home and read my old D.M. over and over. My old shoes will do to go to church and pray that the war will end soon and the D.M. will not be taken from me.

WM. P. BLINZLEY

Poetry vs. "Poetry" . . .

Ramona, California

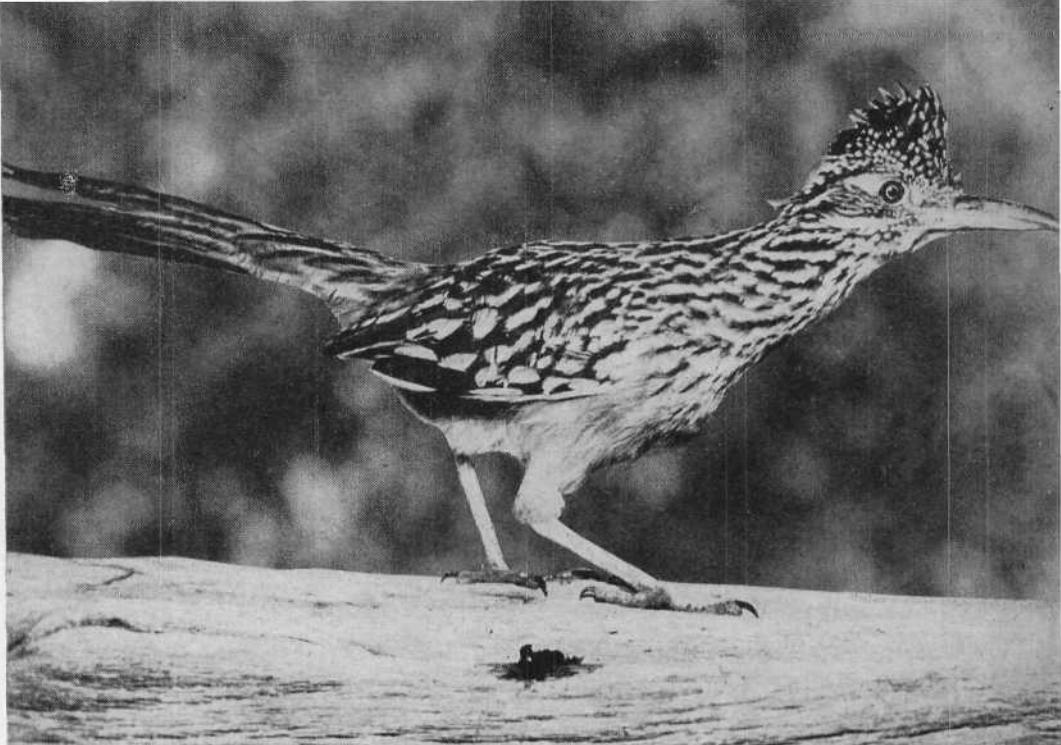
Dear Miss Harris:

I think Wm. C. Chandler, in the March issue, took in a lot of territory when he said that those who send in poetry are inspired by thoughts of beauty. Helen Knupp, whom he criticises, is right. Most of the so-called poetry in D.M. is abominable. Little of it has rime, rhythm or reason—it jars the ear that truly loves poetry.

Their defenders say it is all right, since the writers' intentions are good. But how would they like for me to pick up a violin and because I love music, love beauty and have a desire to play, start playing without one iota of musical knowledge or training. Do you think musicians or lovers of music would grant that my efforts were lovely merely because I felt inclined to produce music?

I have loved Desert Magazine from the first issue, November, 1937, and I appreciate the appeal the desert has for lovers of beauty—but why must they turn its beauty into a nightmare by foisting their "poetry" on others? Of course one does not have to read that page, but if one loves poetry as I do he persists in reading it in the hope that sometime he will be rewarded—for sometimes there is a diamond in the rocks.

CARRIE E. SACKRITER



Here is the bird who sometimes is denounced by those who have not made an unbiased investigation. He is called variously, Roadrunner, chaparral cock, ground cuckoo, paisano. Photo by George M. Bradt.

Defense of the Roadrunner . . .

San Diego, California
Editor, Desert Magazine:

The letter of one Richard Osmond in the March issue is an insult not only to a fine and famous bird but to all lovers of wild life and scores of capable naturalists. By what law of courtesy or fairness does one like him rate such rich and perilous publicity? The pity is that his malicious words can now be quoted for years by those who desire the crucifixion of the roadrunner.

Any reader of the Desert Magazine who is unacquainted with the esthetic and economic value of any distinguished western bird can consult the magnificent volumes of William Dawson, the scientific writings of Grinnell, Bryant and Storer, the popular books of Florence and Vernon Bailey, William Finley, Edmund Jaeger, the bulletins of the National Audubon Society, publications of the Biological Survey, the scholarly bulletins now being published by the Smithsonian Institution, edited by A. C. Bent (See No. 176, 1940, roadrunner).

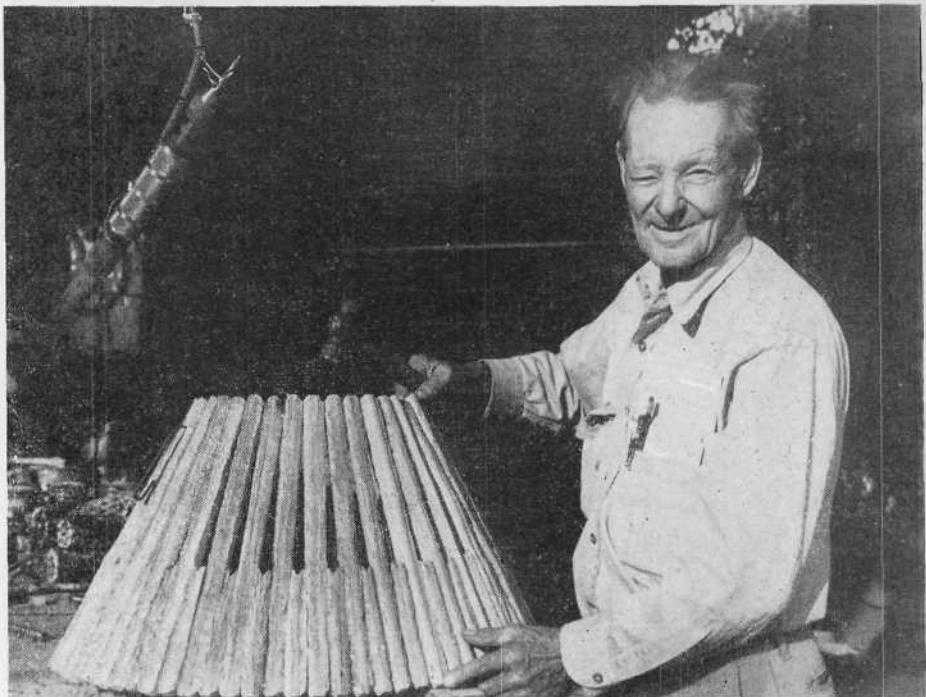
The scientific report, "Food Habits of the Roadrunner," written by H. C. Bryant while research biologist for California fish and game commission (Univ. of Calif. Pub. in Zoology, Vol. 17, No. 5, pp. 21-58, 1916), is based on an investigation made to satisfy the complaints of certain hunters (not true sportsmen who are real conservationists) that the roadrunner was a serious destroyer of baby quail. Eighty-four roadrunners from Southern California were killed in 1911-12 during every month of the year, especially during the nesting season of quail. The stomachs of these birds were analyzed by experts in the laboratories of Berkeley. Not one trace of quail was found in a single roadrunner.

Does this mean that no roadrunner ever kills a young quail? Certainly not. Once in a while an occasional roadrunner makes a lucky meal of a young mocker or linnet and, in a blue moon, of a baby quail. There is no shred of reliable evidence that roadrunners ever destroy birds' eggs. For 50 years I have been observing roadrunners in the Southwest, often following them for hours and miles and have taken enough field notes to make a book. For 33 years at my ranch near San Diego roadrunners have come through my place nearly every day of the year. I have seen them catch or carry scores of crickets, beetles, lizards, grasshoppers (these four items make up three quarters of their food), cicadas, mice, snails, young gophers, tomato "worms," small snakes (only in myths and movies do roadrunners kill snakes too big to swallow whole), and during 50 years, three birds, but never once have I seen a roadrunner attack a young quail although both birds have nested every year within a stone's throw of my house.

But why shouldn't a roadrunner kill a bird, even a sacred quail, once in a while? He was here long before the Indian, among millions of quail which hunters have slaughtered. How idiotic to call roadrunners "murderous!" Birds kill to eat, not for "sport." Men alone murder—quail, roadrunners, even their own kind. Not one roadrunner in 50 ever gets a chance to kill a baby quail. Fewer persons have seen this happen than can understand Einstein. R. O. doesn't claim to be one. I too have seen mother quail fluff out their wings at passing roadrunners but the roadrunners went about other business. Quail are just as quick and clever as roadrunners.

CARROLL DEWILTON SCOTT

After reading this story you probably will want some of R. O. Perry's cactus furniture to give an authentic desert atmosphere to your Southwest home (or the one you are going to build with those war bonds)—but don't send him an order. He has paid in advance orders to keep him busy until 1950. You see, Mr. Perry is essentially an artist—he doesn't turn these pieces out with the price tag in mind, and any suggestion of commercializing his furniture making will call forth a flaring temperament. For with patience and skill and pride of workmanship he has raised this craft to the level of an art. But even if we can't all have some Perry-made furniture, we can "look at the pictures."



Patience and pride of workmanship have earned R. O. Perry the rank of artist in design and manufacture of saguaro furniture.

Craftsman in Cactus Wood

MAKING SOMETHING out of nothing is a rather common desert trait. But to develop something as highly artistic and useful as R. O. Perry of Phoenix, Arizona, has, requires an extremely ingenious resourcefulness. He has taken the most unworkable, uninviting

By OREN ARNOLD

wood imaginable, accepted its peculiarities as a challenge, and produced from it articles of furniture which equal and excel the finest pieces made anywhere.

A floor lamp, a desk, a chair are some of the Perry-made cactus pieces seen through the window.



The wood Mr. Perry uses is the dried skeletons of the saguaro, giant cactus whose blossom is the Arizona state flower. He heads the very small list of craftsmen who ever have tried to make anything worth while of this unusual wood.

Saguars have a peculiar anatomy. They consist, roughly, of a great bundle of vertical cylinders, their outward appearance showing as ribs. When the plant dies these sometimes split apart as they dry. Instead of using these individual ribs or poles as is sometimes done, Perry has found that he has more scope when he uses the entire trunk, with the skeleton ribs properly grown together, for the central piece of his design.

He also has learned by experience just how to cut that saguaro trunk. By digging down two to three feet into hard desert soil, he can take the exceedingly strong base roots as well as the upper structure. These two preliminary tricks give him a great advantage. But patience and pride of workmanship have earned him the rank of artist in design and manufacture. He is the Sheraton of the cactus country.

R. O. Perry does not make trivia. His interest is far removed from useless little knickknacks—picture frames, ash trays, pin cushions—pretty stuff such as you see made of cactus in the curio stores. The nearest he comes to them is in the manufacture of a specialty item created for sol-

diers—a lovely little covered wagon lamp. It is made not of saguaro but of cholla, and is a prize winner for cleverness of design. Since soldiers training in the Southwest were unable to buy his larger pieces, he created smaller items for them to send to their mothers and sweethearts as worthwhile souvenirs. He cannot begin to supply the demand for them.

The bedsteads, chests of drawers, dressers, floor lamps, tables, cabinets, davenport and chairs which he makes are in no sense freakish because they are made of saguaro wood. They are not fragile or flimsy, like the picturesque but cheap chairs you can buy from home craftsmen in Mexico. They are, says Perry himself, "strong enough to hold a bull elephant." This is achieved by clever hidden bracings of steel wire, by nails and screws and mortising and glue as with any other good furniture. But it must be remembered that saguaro ribs are about broom-handle size and

Saguaro furniture in this adobe living room reflects the strong bold beauty of the Southwest.

CACTUS HINTS FOR AMATEUR CRAFTSMEN

1—Gather only naturally dried saguaro skeletons; don't try to cut green ones and cure them. Get whole trunks in which ribs are grown together as a firm lace-work, but bring also the loose poles or ribs of others, for trim. Cut dead trunks one to two feet below ground level. This sturdy root structure is valuable for lamp bases, chair legs, etc. Beware of splitting. 2—Drive out dried pulp with long-handled chisels and pestle. Scrape where needed. Do not gouge or break skeleton structure. Wash off dirt with water hose and stiff brush. Dry thoroughly in sun. 3—Have pencil sketch of item you want to build, with dimensions marked. Now select the piece of saguaro most likely to make a given part (base of lamp, leg of chair, drawer front, or whatever). Give it great care for strength and artistry's sake. This is your test of talent! 4—Square the bases by careful scribing and sawing. Make angle fittings in usual way. Power saws and clamps are essential to get long smooth-plane surfaces on this irregular cylindrical wood. 5—Following your sketch, cut piece by piece as needed, and fit the whole together as you would a puzzle! Some adroit interlocking can be contrived. Relatively little glue is used—this wood is porous. Finishing nails are used freely, and for such items as lamp shades heavy steel wires are threaded through the many little pieces for strength. Lamp bases, table bases and tops and similar items, require $\frac{3}{4}$ -inch plywood for holding the saguaro. It is simply nailed on, sometimes screwed. Chests of drawers are made in the usual way, with saguaro veneer. Steel buffers, sandpaper, wheels—all are important. Use your ingenuity. For finishing, never, never paint saguaro. It looks terrible. Clean with a weak oxalic acid solution, but most stains are natural and permanent and are a part of the rugged beauty. No oil, no varnish, no shellac, no fancy stuff. Some good effects are obtained by applying a clear wax. Most people prefer the pure right-off-the-desert look.





Desk, chair and table handmade of saguaro wood.

shape, that the entire trunk of a cactus is a lacy and hollow cylinder of such ribs and that the wood is very porous. On the other hand, the wood also is astonishingly hard. A nail driven into it is there to stay. It does

not split easily, but it is all irregular in shape.

Thomas Sheraton, the master designer and craftsman who worked in England around 1800 and set precedents of beauty and

Twin bedsteads and stand of saguaro are strong, durable.

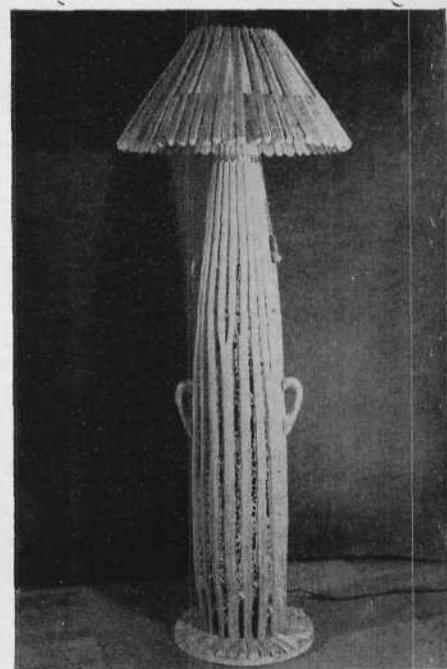


quality that still stand, at least had solid blocks of wood with which to work, and had a choice of woods, too. Sheraton's pieces were marked by a light elegant design, straight lines and graceful proportions, which were in harmony with English social life of his time and therefore are a commentary and record of social history.

R. O. Perry's pieces are no less graceful, no less elegant in design, but they too reflect the time and place of origin. They are the sturdy, bolder beauty of the Southwest.

By good fortune I was able to buy a floor lamp from Mr. Perry to give my wife for Christmas. I was handling the shade as if it contained eggs.

"Why, good jumping hades, Arnold, you can't break that thing!" he railed at me. "Here, rough it around!"



You can throw this floor lamp on the cement. It neither breaks nor scratches.

He took it from my hand and threw it hard on a cement floor. It merely bounced and rolled. I examined it closely — not even a scratch! I should hesitate to drop a Sheraton item, even on grass! I would not care to live in a desert home furnished with Sheraton furniture.

By now perhaps you are wishing you could have some of the Perry pieces. The illustrations here are but random samples of the designs in his catalog. I wish I could include a coupon for you to sign and mail to him. But it would do you no good. His furniture is "not on the market."

In other words, he already has a stack of orders, with money in hand, for furniture items "to keep me busy until about

1950," says he. Mr. Perry works alone, with his wife to "see after" him. He cannot hire craftsmen to do cactus work. There just aren't any craftsmen who can meet his standards. He reminds me of some old-world artist, say a Stradivarius, laboriously making masterpieces in a violin shop—unhurried, untouched by greed. He owns a rather elaborate workshop with queer tools, lathes, buffers, turners, saws and whatnot. This is in a big shed in his front yard, without walls, gates or guard. Remainder of his yard is covered with dumps of cactus wood brought in from the desert. Nobody ever molests him. Thievery of his tools and products is unknown even though he is near the heart of the largest desert city.

Once in a great while, if the mood strikes him, he cleans out his shop, shovels away the sawdust and the shavings and the dirt. Mostly he just wades through it, meditating on human nature and calmly working on a table with his hands. During the long afternoon I spent there, a cute little girl named Carolyn Phillips, aged 8, came voluntarily and swept part of his work table and the floor where he stands. Mr. Perry is 71, but between these two is an affinity, a kinship, an understanding. Mr. Perry, on the surface, is a crotchety loud-spoken, unconventional sort of "character," but underneath that crust I suspect is a very peaceful and happy man. I wanted to know more about a man who would make a living building cactus furniture by hand.

"I ran away from home in Iowa when I was 14," said he. "I wanted to go out West and become a cowboy. I did it, too, by george! Then I worked a spell in San Francisco, fought with Italian kids, went back to a ranch. Later I got into building things, and grew up to be a sort of contractor. In 1927 I got mighty interested in irregular fittings.

"I mean, I was building log houses in California—at the Shasta Springs railroad depot, in fact—and we had some fun fitting the odd shaped logs together to make them strong and pretty. It appealed to me no end. I got to fiddling with cactus then because it was irregular too. So I came to Arizona where the cactus grows. One thing led to another, and here I am."

To get his raw materials, Mr. Perry and two Mexican helpers roam the back-country desert from Prescott to Nogales, even into Sonora. Most of the wood is gathered within 100 miles of Phoenix. He has made more than 200 collecting trips. This work cannot be delegated, because untrained wood gatherers spoil the wood.

Mr. Perry is not in this work for money.



Two saguaro chairs blend with atmosphere of Southwest patio.

He lives humbly, suffers no want. But he will not compromise. If it takes three months to make a piece of furniture for which he receives \$125, then he will use the three months. He will not raise the price and he will not lower the standard. A certain retailer in Phoenix told me he went to Mr. Perry 10 years ago.

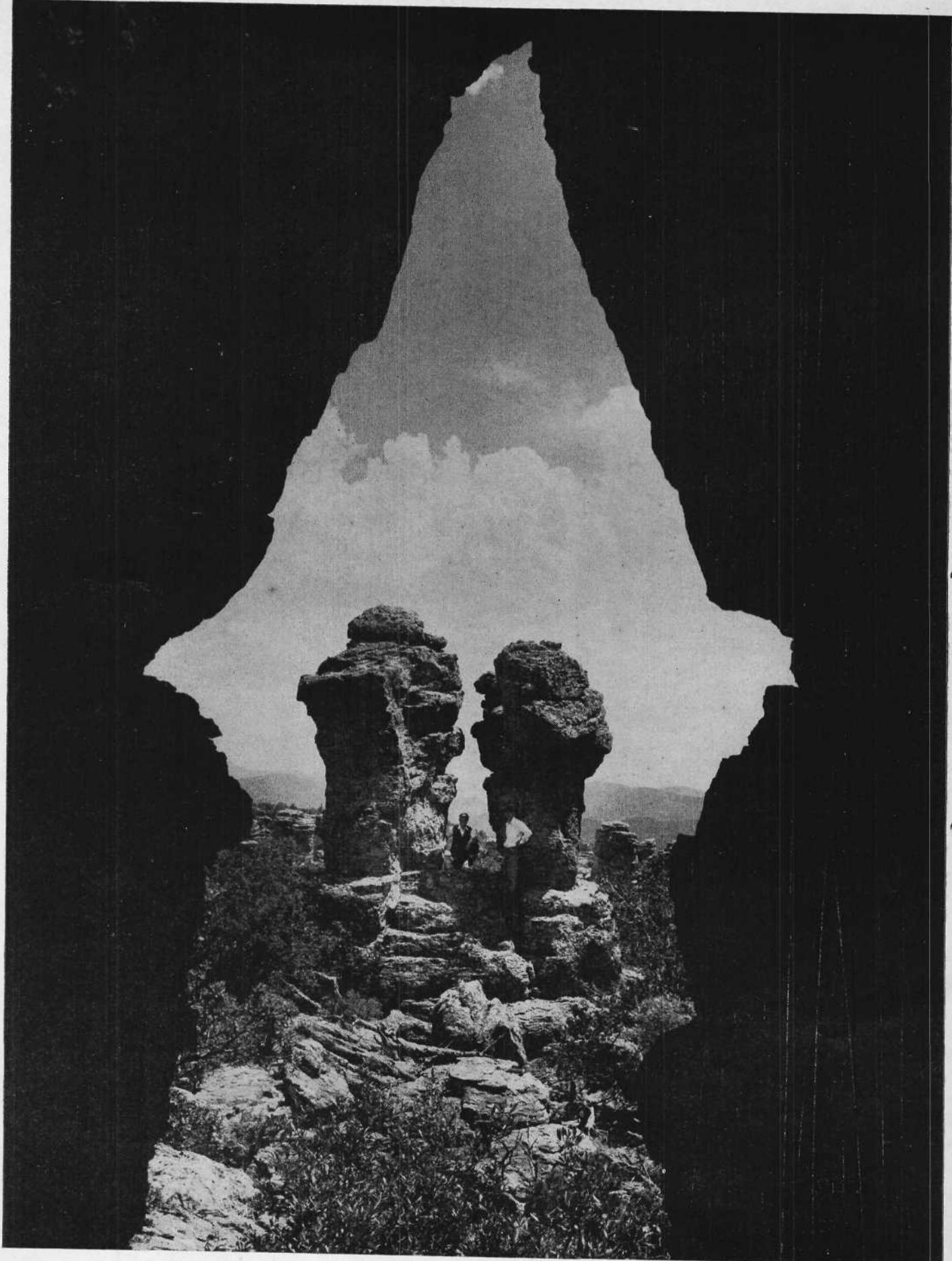
"If you'll cut down the quality, Mr. Perry," the retailer said, "by making a few short cuts which I can show you, then you can turn out this stuff three times as fast and I'll handle the sales. We'll both get rich."

Mr. Perry's answer was emphatic—and unprintable. He used a choice collection of desert phrases as pointed and barbed as cholla spines. And he emphasized them with flourishes of a large hammer. The words, and the flourishes, followed the retreating retailer out of the yard, past the

sidewalk, onto the street. The retailer hasn't been back.

At least one millionaire's penthouse in Manhattan is furnished with Perry-built cactus pieces. C. R. Smith, president of the American Airlines, has a set in his ranch-house home in the heart of Manhattan. Other wealthy folks in Chicago, Philadelphia, the Bahama Islands and around the land generally have been able to collect pieces from the front yard shop in Phoenix. The Biltmore hotel in Phoenix had quite a display at one time. I now own a lamp and a table—duly insured, with the doors of my adobe home locked at night. And I have applied to Mr. Perry to build my wife a desk for a Christmas gift.

If Mr. Perry lives long enough, and if the mood hits him, and if I can save the money, I'll get that desk some Christmas within the next decade.



Punch and Judy

By JOSEF MUENCH
San Barbara, California

Seen through parted curtains of stone, these incorrigibles still mouth words at each other after hundreds of thousands of years, in the geologic wonderland of Chiricahua national monument, southeastern Arizona.



Nan Songer transfers a Black Widow spider (on underside of lid) to her work table to be silked.

EVEN THE SPIDERS of the desert contribute their share towards Victory. Nan Songer of Yucaipa, California, sees to that. She reels out their web, winds it on special frames, packs it in special containers, and sends it out to do its special part in war activities.

As we sat in her home one recent afternoon, I could not help wondering how this dainty, hazel-eyed woman had come to make spiders, especially Black Widow spiders, her intimate business partners. Because Mrs. Black Widow has a baneful reputation. Long-legged and glossy, she wears a scarlet hourglass on the under side of her round black body, invariably murders her small lusterless husband, and has equally gracious intentions when it comes to humans. Hence, nobody loves the Black Widow — unless, perhaps, Nan Songer does. I didn't ask her that.

"Do you take web from any kind of spider?" I asked.

"No." She smiled. It was a nice smile. "Most spiders spin brittle, cottony web. That which I take is used in the reticles of telescopic instruments and has to be elastic. So far I have found that Golden Garden, Green Lynx and Black Widow spiders produce the most satisfactory web. However, I can get good web also from the Banded Garden spider and sometimes from the large Aranea, a dark grey fellow with a three-cornered body. But for consistently good web I like best the Green Lynx and the Golden Garden. In autumn, though, these adults die, so for winter work I use adult Black Widows and the young of the other two species. I like especially the web of the young Green Lynx for splitting."

"If an outsider had walked in on the scene at that moment he would have thought Nan Songer was practicing the art of suggestion on me. She was holding up a metal frame on which she had just wound 54 turns of spider web—or so she said. I could not see anything on the frame—yet I knew the silk was there for I had been watching her 'silk' the spider on the table before us. The web's extreme fineness and elasticity make it invaluable to our government for use in instruments subjected to sudden temperature changes and telescopic instruments requiring great precision. Since the beginning of the war Mrs. Songer has been supplying this essential material to the government. She does not consider her job of boarding and silking spiders unusual, but having watched each process of the procedure, I came away with some 'believe it or not' facts."

Spider House

By MORA M. BROWN

Splitting! I swallowed the amazement lumped in my throat.

"How," I began, thinking to sneak up cautiously on this puzzle, "did a person like you develop such . . . such insectarian habits?"

She repeated the smile. "I was a delicate child, and to keep me outdoors my parents started me collecting moths and butterflies."

At that moment I could have sworn that I heard a small chorus of crickets fairly close to my ears. But I knew, of course, that such a thing was as impossible as splitting spider web.

"Collecting moths and butterflies," Mrs. Songer went on, "started my interest in other insects. Entomology has been my hobby ever since."

"Including spiders?"

"Yes, but not especially spiders. Indirectly my crickets led me to the spiders."

I stifled another gasp. "Please," I



Black Widow being "herded" to her "stanchion" for silking.

begged, "go right on talking." I believe she is used to having people gasp.

"Well, after my children no longer kept me busy (Mrs. Songer has a daughter married, and a son somewhere on a destroyer) I began to raise crickets, study their habits, and report my findings to the Smithsonian Institution."

I didn't say a word. I simply waited.

"Then, when war began, the U. S. Bureau of Standards wanted spider web in quantity. So the American Museum of Natural History, which knew of my connection with the Smithsonian Institution, wrote to me about it. I volunteered to do the work."

Wound on metal frames, 12 to a box, Mrs. Songer sends her spider web to speed the day of Victory.



"So now you board spiders and they pay you with web."

Her look was forebearing, like that of a patient mother for a backward child. I let my own gaze shift to double windows where plants filled two long shelves. No, you don't find spiders glaring at you from webs in all the corners of Mrs. Songer's house—except in summer when the Golden Garden spiders have their large webs in the windows. They live mostly in various sized glass jars set among the plants. They have private greenery to crawl on, San Bernardino peak for scenery, and little bugs to eat.

Mrs. Songer led me to the window. There I saw large families of young Green Lynx, lonely and listless male Black Widows, and the sleek black females with such ugly dispositions that they have to live alone.

"What kind of bugs do you feed them?"

"That depends on the season. In warm weather I collect plant lice from kale. I also trap gnats with sweet bait. Just now I feed them baby crickets."

So I had heard crickets! "Where are they?"

"There." She indicated what looked like a tall thin garbage can made of wire screening underneath the window. "Sometimes in a pinch," she added, "I even feed them liver. And baby Black Widows do very well on tiny feedings of ice cream."

I pinched myself, decided I was awake, and prepared for anything.

"Did you know," she continued, "that baby Black Widows are white at first, then black and white striped? Pretty little things."

"Maybe," I conceded. "But seriously, about this splitting business—that's cutting web down pretty fine, isn't it?"

"Down to five one-hundred-thousandth of an inch."

"How do you know?" I thought I had her there.

"At first," she admitted, "I had to use my own judgment, but now the government has perfected a method of measuring web by the magnified shadow it casts upon a screen. I know now that the split web of a six weeks old Green Lynx will measure five one-hundred-thousandth of an inch."

"Suppose," I ventured weakly, "somebody asked you for unusually heavy web?"

"They do, so I spin two or more webs together. I fill orders frequently for web measuring five ten-thousands of an inch. No spider spins web that coarse."

Such a mathematical excursion was too much for me. I wanted to change the subject before I was lost in the entanglements of microscopic measurements. So I begged, "Suppose we start right here and you show me how it's done."

Which is just what she did, so I can vouch that it's all true.

First she took the lid from a Black Widow's jar with the spider clinging firmly to the under side. She carried it to an elongated ironing board set against the wall of her living room. On that board I noted first a large popcorn can lying on its side and wired to serve as a reflector for the light inside; a section of yucca with a stairway on one side; other yucca sections holding steel frames; shellac; some spider jars for which there was no room in the windows; a microscope (which she did not use); a wooden gadget which I could not name; some brushes and small steel instruments.

She tapped the jar lid against the yucca

Nan Songer at her work table, with a frame on which she winds the spider web "silk."

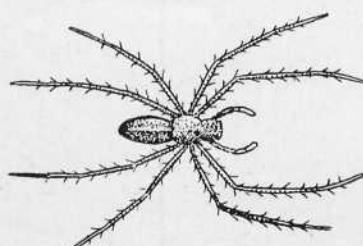
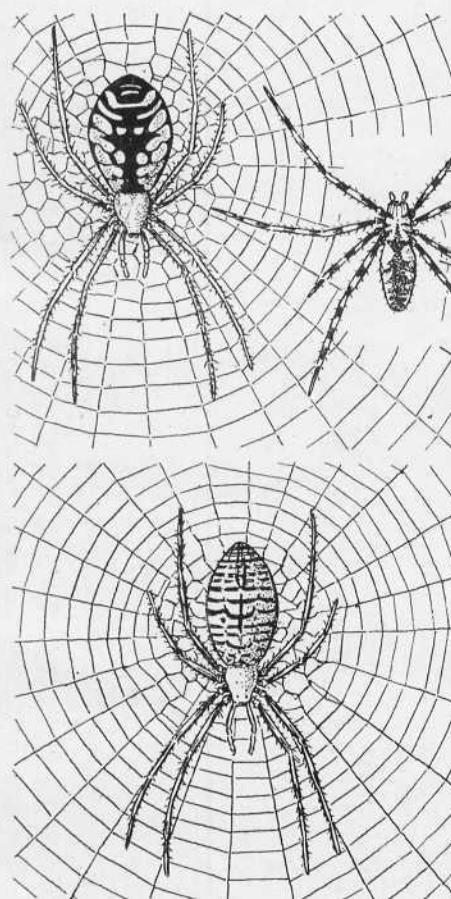
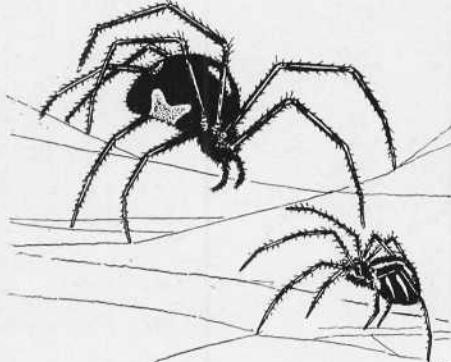


stairway until the spider dropped. Then with tweezers she chased it around the slab.

"I always try to catch them near the foot," she explained, "so they can't pull off a leg."

She had the spider now, and worked it towards a groove in the middle of the top step. Then into the groove went spider, pointed end out, long legs squirming over the top.

"Held there"—she placed two bits of plate glass over the long legs to keep them



Spiders don't glare at you from their webs in the corners of Mrs. Songer's home. They are kept in jars set among the plants on shelves at her double window.

quiet—"they can neither kill themselves nor harm the web."

But the spider still wriggled, so Mrs. Songer anchored it with a squared steel affair similar to a hairpin, which did not hurt the spider, but kept it fixed. It made me think of a cow in stall and stanchion waiting to be milked. And the difference was not so great, because the spider was waiting to be silked.

"The silk glands of a spider"—she dipped a brush in the shellac and smeared a little on the edge of the popcorn can from which a bright light streamed—"are clustered like a bunch of grapes inside the tip of the spider's body. They connect with the spinnerets at the tip. Inside the glands the web is liquid. It becomes web when it touches air." She took up a dissecting needle.

Poor spider, I thought, expecting to behold a major operation.

But no. She used the needle to tickle the spinnerets, and the spider gave out silk. Using the tweezers she pulled the

end of the web from the spider to the smear of shellac on the can. Next she took a steel frame from a yucca slab. It was rectangular in shape, about two inches by ten. She shellacked it all around the outside edge. Then she transferred the web to one end of the frame which she turned deftly around and around.

I could see nothing on the frame, nor anything between the frame and the spider, but . . .

"It takes 54 turns to fill a frame. This one is full." She held it between me and the light, and there glistened the web as neatly spaced as if done by machinery.

"It all goes out on frames this size," she said, anticipating my question. "Two inches is long enough for all practical purposes. For shorter lengths, they cement the web into place before they remove the excess."

"How much web could you get from that spider?"

"A hundred feet at a time. Fifty feet from a young one."

1—Black Widow spider, *Latrodectus mactans*. Adult female is almost half inch long, twice size of her mate, shown with her. She is glossy black, with red hourglass on underside. Beware this venomous spider. 2—Golden Garden spider, *Miranda aurantia*. Dwarfish male, inset. Female measures inch or more in length. Black with bright yellow or orange spots. Male about one-fourth size of female, yellowish brown on upper back, broad brown band down middle of back with zigzag band of white on each side. Webs up to two feet diameter, symmetrical. 3—Banded Garden spider, *Metargiope trifasciata*. Closely related to Golden Garden, rarer, white or light yellow body with transverse and longitudinal lines. Adult female three-fifths to four-fifths inch long. Male one-fifth inch long, upper part and legs yellowish, abdomen white. Young female appears silvery white with black bands. 4—Green Lynx spider, *Peucetia viridans*. Light green with small reddish dots. Red spot in center of head, yellow dots at base of head. Body marked by yellowish oblique spots edged with brown or red. Legs greenish white, hairy, conspicuously marked with red and black. Adults three-fourths inch long.

"How long do you have to wait to take web again?"

"I could take it after four days. I'd feed the spider for two days, take it away from food two more days to insure clean web. Then it is ready for silking. However, after yielding around a thousand feet of web a spider usually dies."

"Do you like this work?"

"Yes, I find it very interesting. Besides, I'm helping with the war."

"Well, tell me, just how does the government use this web?"

"It has a hundred uses—microscopes; instruments used for taking blood count; survey, astronomical and navigation instruments; range finders; bomb sights; gun sights; in fact, any telescopic instrument requiring precision. It is especially satisfactory in instruments subjected to sudden temperature changes, because it can contract and expand without breaking. The web I split is used by a man named T. K. Lee of Birmingham, Alabama, for his famous Tackhole Dot.

"He has perfected a telescopic gunsight in which one sees, instead of crossed hairs, a small black dot which the gunner aims at the spot he wants to hit. Lee has also perfected a naval gunsight no larger than a pinhead, yet eight segments of web hold the dot in place. Another sight has seven dots. It is used in speeding planes."

The spider web business, I was learning, was infinitely bigger than I ever had imagined.

"Will you show me next, please, how you split a web?"

For answer, she drew more web from the spider and began to snag at it with the dissecting needle, much the way you would snag at a silk thread—if you had one. And finally, like a thread, it separated into strands which Mrs. Songer pulled apart without breaking. I wondered what would happen if I tried it.

"All right," I admitted, "I saw you do it. Now how do you spin the webs together?"

From the far end of the board she took the wooden gadget I had not recognized. On one side it had a small wooden wheel from which projected four little knobs. On the other side was a larger wheel with a handle.

"I get as many spiders as I need in grooves like that," she said. "I shellac as many of the little knobs as I have spiders, and fasten the ends of web to each knob. Then as I reel out the web from the spiders, I move away from them turning this larger wheel. It spins the small wheel, and thus the web is twisted into a single strand. That's all there is to it."

Even though it didn't sound simple to me, I was still curious.

"Do spiders ever get temperamental? Do they ever hold out on you?"

"They don't hold out, but they overdo it sometimes. We have been talking about normal web, but every spider can spin several kinds of silk. So occasionally even my favorites spin brittle, cottony or sticky web. Sometimes too they release liquid from all their glands at once, and I get multiple web. I have counted as many as 32 strands. None of it is usable. But usually a spider settles down quickly to submit to silking."

"Are you kept busy filling orders?"

"It's like a store—rush and quiet periods. Sometimes I work day and night to keep up. Sometimes I have to do only the split web for the Tackhole Dot."

"Do you want people to send you spiders?"

She laughed. "See all these jars? See that cupboard in the corner? As a result of a published article I've received Black Widows until I'm swamped. I had to dump them all in that cupboard from the top, and no doubt they're having war. Besides, because they are poisonous, some postoffices won't handle them. Just now an army car from March Field picks up my spiders and brings them here."

"So you are not eager for Black Widows?"

"No—they are not hard to get, but I never have enough of Golden Garden spiders, or Green Lynx. The Golden Garden is big with bright yellow markings on black. He weaves a web two feet across. The Green Lynx is not a web spinner. He goes hunting and pounces on his prey, trailing his web behind him. He is a bright transparent green with tiny red and yellow dots and full-grown, is no midget."

All this time the Black Widow waited. It was quiet, but also angry, as its long-legged dashing around the pedestal proved when it was free. Deftly Mrs. Songer chased it with the tweezers, caught it and returned it to its jar.

"Have you ever had a spider bite you?"

"No. I never have fewer than 50 Black Widows on hand, but whether my spider is poisonous or not, I always use tweezers."

I looked at her standing there in the light's glow. Petite, attractive, calm.

"Right now, with your son somewhere Out There," I said, "I can understand what this work means to you. You are contributing something vital to him, and to all those other sons."

"Yes," she answered, "I feel that way about it." Yet, from her simplicity and her unassuming manner, it was hard to feel that here was a woman whose work is unique, a woman written about widely, one twice filmed because of the strangeness of her profession. A woman in a small home almost in the shadow of Old Grayback, quietly fulfilling one of the most important missions in America today.

Sez Hard Rock Shorty

of
Death
Valley

By LON GARRISON



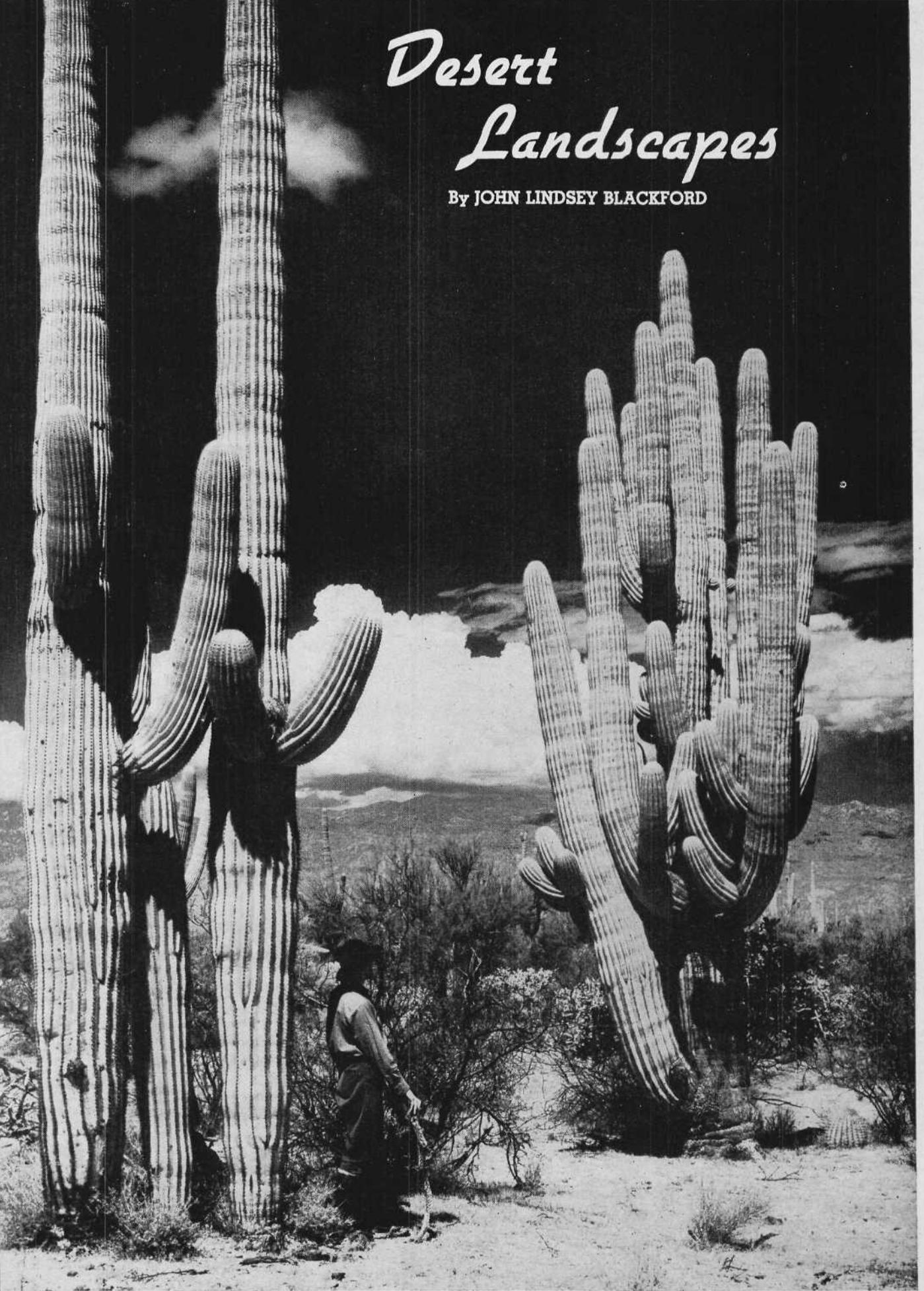
"Dogs?" asked Hard Rock Shorty. "Sure—I like dogs. Since I moved to town an' old Ring died I don't have one anymore. That Ring now—there was a dog!"

"Ring was a big, all-black dog with a white ring around 'is tail when he was a pup. Purty dog too, an' for years I took 'im with me ever' place I went. He wasn't no earthly use for anythin' that I ever found but he was sort of company when I was out alone an' the burros'd run off again an' I needed somebody to cuss."

"It was interestin' the way he lost that ring on his tail. One time up on Eight Ball crick when Ring was young he got to feudin' with a coyote. Ever' day Ring'd chase this coyote out of camp an' then in about ten minutes the coyote'd chase Ring right back. That went on three times a day an' Ring never caught the coyote an' never got far enough away that the coyote could catch him."

"Then one mornin' the coyote swiped Ring's pancakes—slipped in an' swallered 'em slick as you please. Ring was right after 'im an' they went Ki-yi-yi out across the desert as far as I could hear 'em. Then purty soon they circled around an' come Ki-yi-yi back on the other side o' camp. Just then I seen another coyote waitin' an' it looked like they was figherin' to gang Ring."

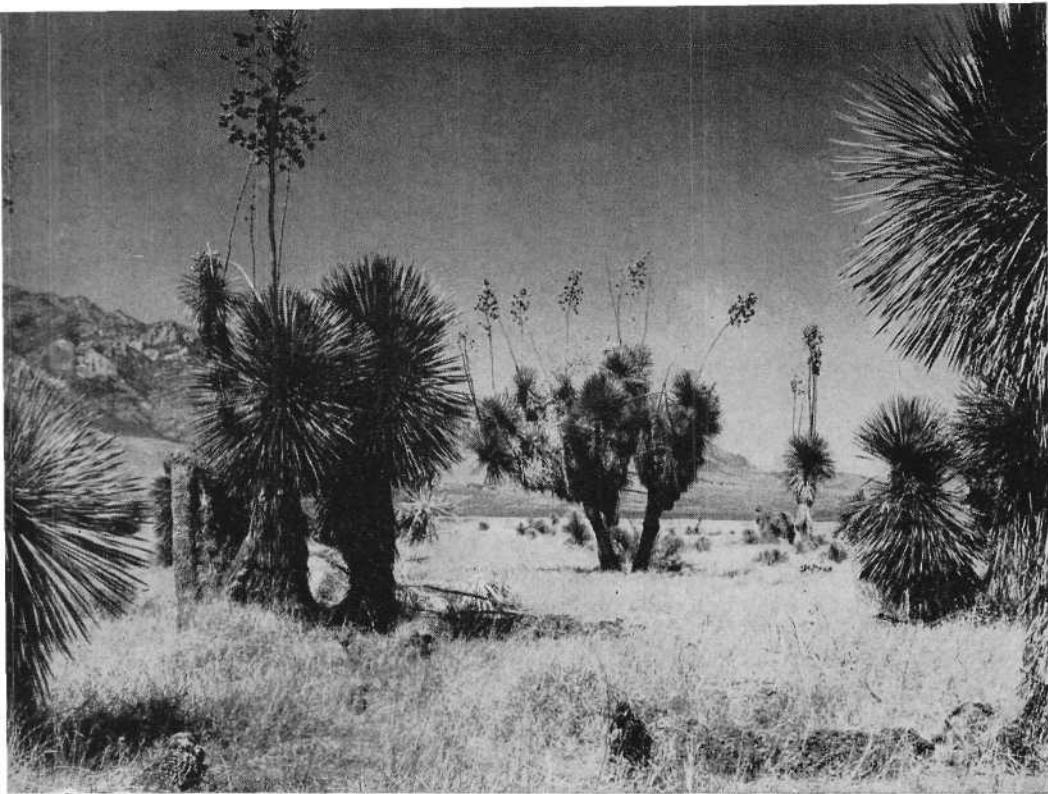
"Well Ring come by camp lickety-blitz, well ahead an' havin' a good time. He was headed right on past when he seen this other coyote too. Ring fighered that out as fast as I did. He slapped on his brakes an' slid in with his feet smokin' an' squealin' on the rocks like tires used to on a dry curve. He stopped just like hittin' a wall but then he begun rollin' on the ground, gaspin' an' chokin'. I run over, an' do you know, when he stopped quick like that, the ring around 'is tail'd slipped clean up over 'im an' stuck just back of 'is ears, tight around 'is neck. He was chokin' to death when I got there an' cut the ring off."



Desert Landscapes

BY JOHN LINDSEY BLACKFORD

DESERT LANDSCAPES



2—*Yucca forest, typical of Desert Grassland, as seen on New Mexico plains. Cream white blossoms on tall flower stalks.*

1. **Saguaro Forest— Western Succulent Desert**

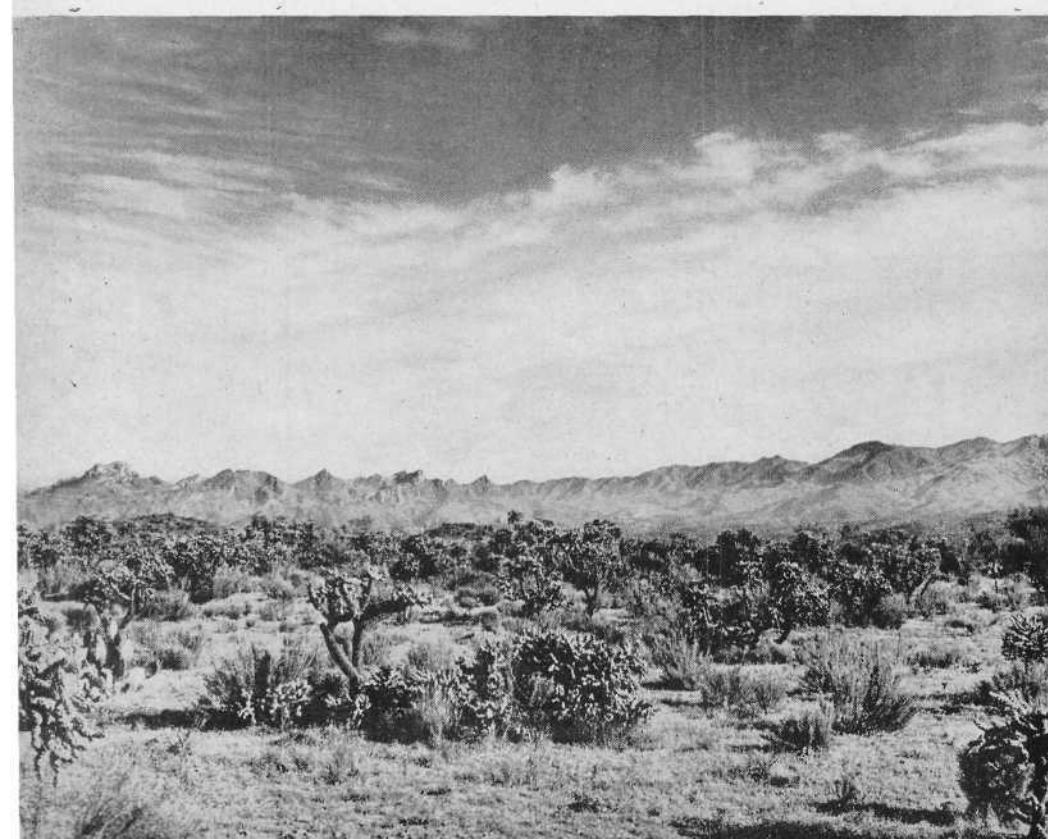
Dominating the Western Succulent Desert, populous stands of the giant cactus, commonly 20 to 40 feet tall, create unique saguaro forests that are foremost among the spectacular landscapes typical of southern Arizona. Strange, green-rinded palo verde trees, flame-flowered thorny-caned ocotillos, and numerous fierce

and grotesque cacti are their lesser companions, and are gathered here abundantly with them at the foot of the Santa Catalinas, northeast of Tucson, Arizona. (Photo on preceding page.)

2. **Yucca Forest— Temperate Semi-Desert**

Most striking phase of the Desert Grassland or Temperate Semi-Desert

3—*Expanse of Jumping Cholla. They do not "jump" but spines are treacherous. This field of cholla in central Arizona.*



Throughout the strange thrilling empire of the sun called the desert there is a notable difference from surrounding lands. This feature which sets it apart is the distinctive flora that everywhere displays a wide and fantastic divergence from the plant life of neighboring regions. The varied character of the often scanty raiment in which Nature clothes herself here in the land of limited rainfall is of never ending delight. If we observe the patterns, or floral types, that the desert wears, we appreciate more clearly the significant response plant life has made here to a unique climate. These landscape aspects are definitely classified by botanists. Yet a familiarity with the Southwest comes more quickly for most of us if descriptions are not confined to the scientific. Whatever your interest, you cannot fail to view with greater appreciation precipitous canyon or illimitable mesa, abrupt rimrock or sweeping ciénaga, if your attention is focused upon the fascinating differences in their floral adornment.

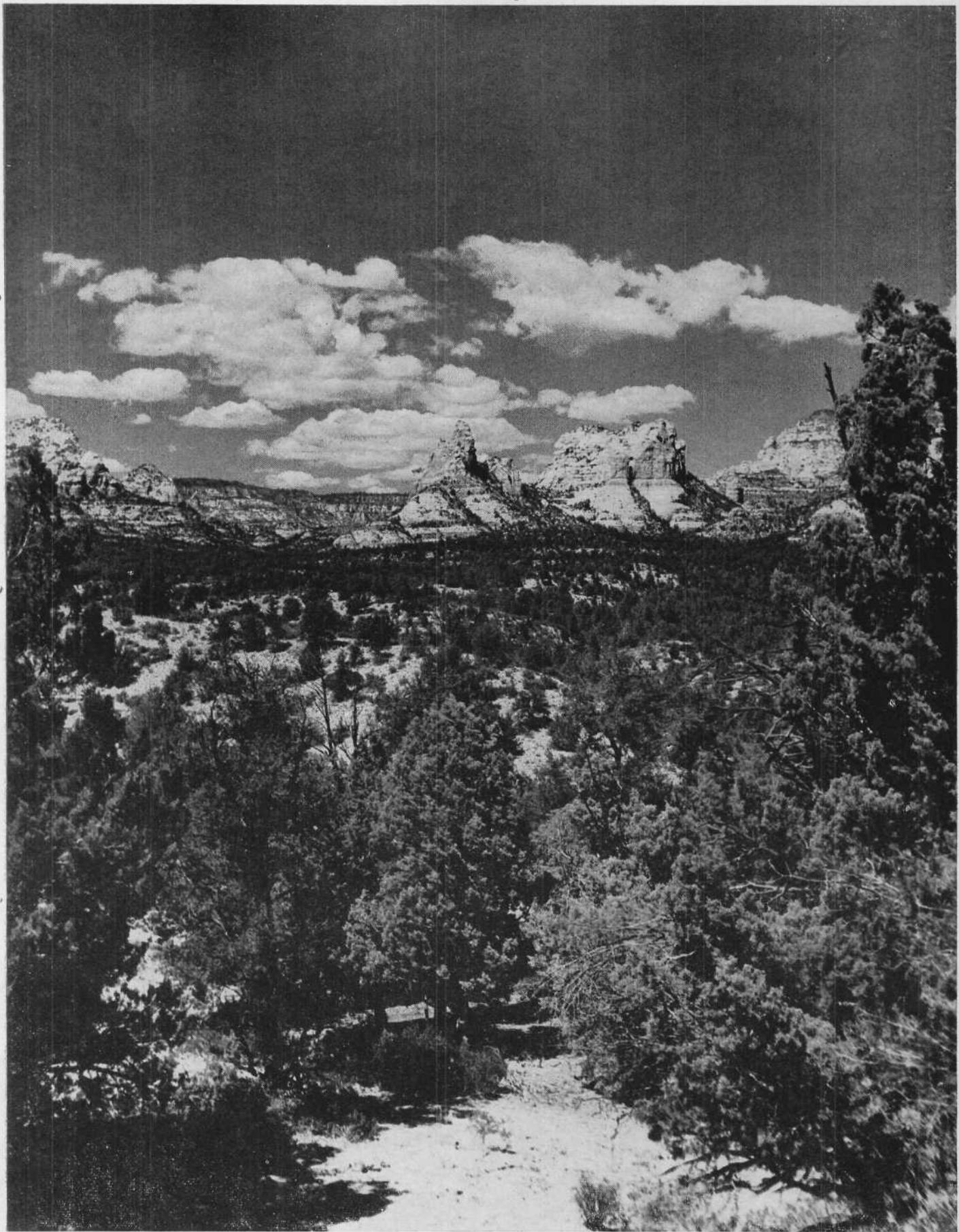
By JOHN L. BLACKFORD

Photographs by the author

are those areas where the tree yuccas take command. Their shaggy trunks and bayoneted crowns are fantastic enough; but giant flower stalks, towering above, add surpassing splendor when they bloom, and grotesque seed clusters are a rare oddity while in fruit. White-necked ravens and black-and-lemon Scott orioles are partial to these bristling groves of the grass-carpeted New Mexican plains.

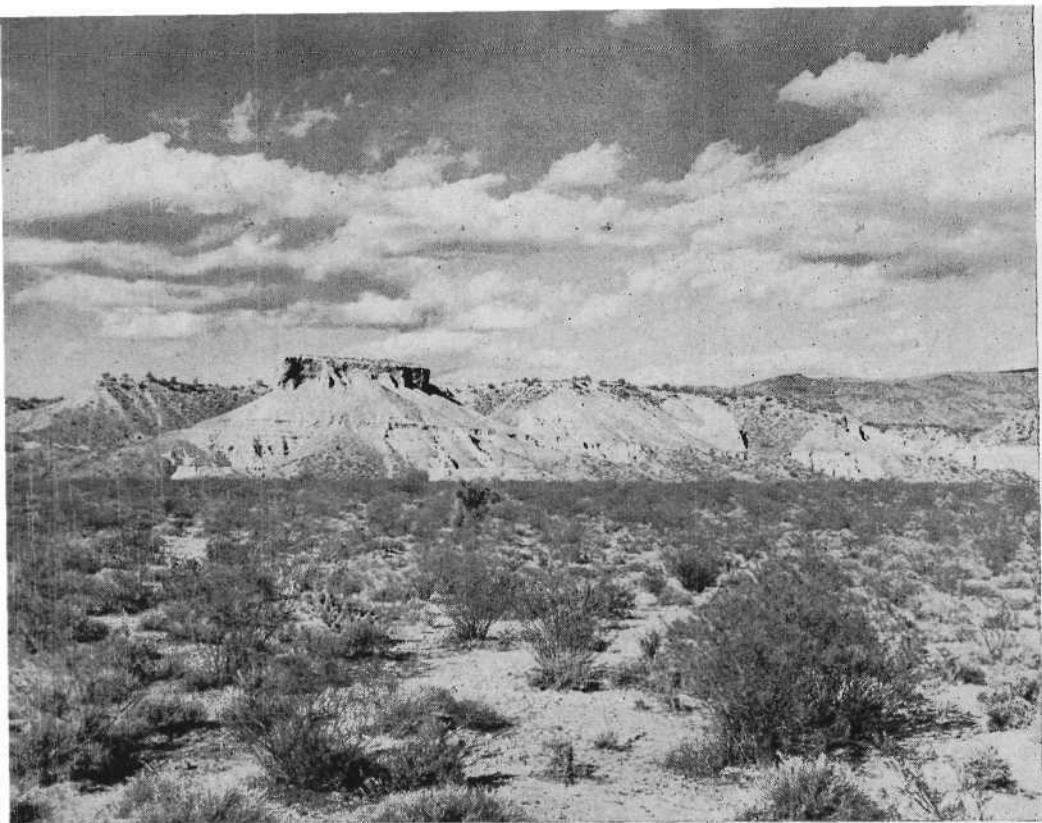
3. **Cholla Cactus Society— Western Succulent Desert**

Weirdest landscapes of the desert are those where "Jumping" cholla sets the stage. Often, as on this cholla plain west of Superior in Pinal county, Arizona, their fierce snarly locks crowd so closely as to seem an endless tangle of writhing snakes. At times their spiny, spiculed joints reach overhead to weave defiant thickets of treacherous thorn. No stranger panoramas, wrought by its vegetation, are to be encountered in the blazing empire of the sun. Golden-



4—Here juniper and piñon trees mingle towards upper altitudes in northern Arizona. Their deep green contrasts strikingly with the brick red of the distant buttes

and ranges. This type of landscape is called by some botanists a Pygmy Coniferous forest, by others, the Woodland Climax.



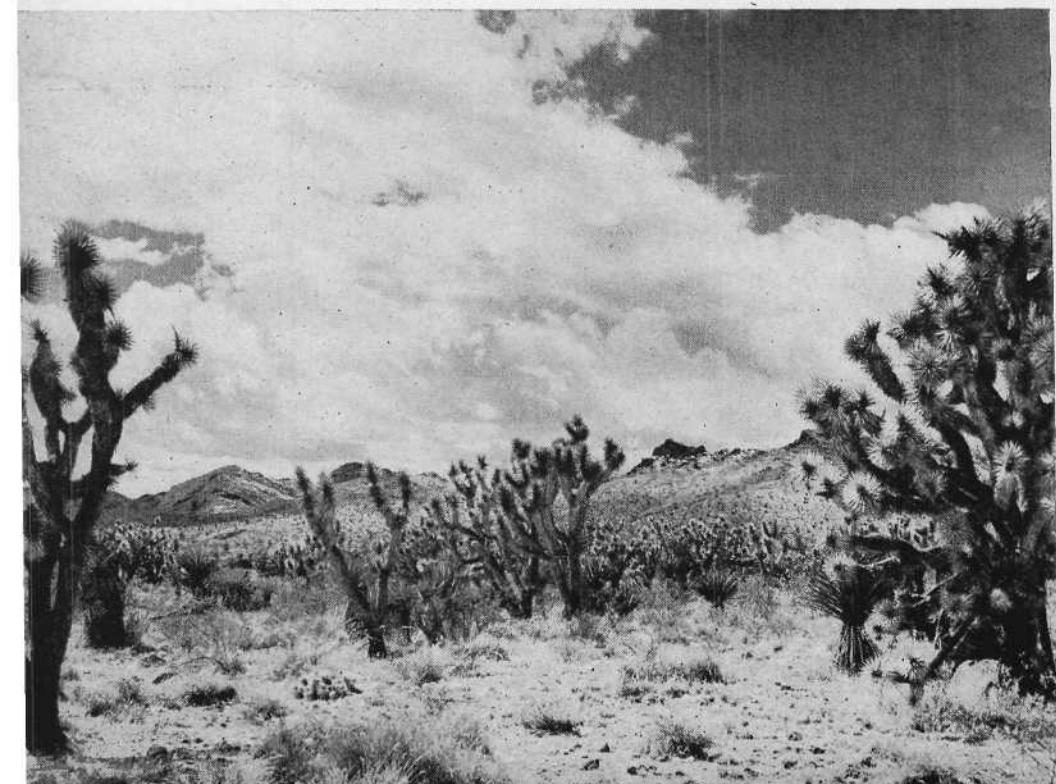
5—Characteristic of lower elevations of Mojave and Colorado deserts and the Sonora desert of southern Arizona and northern Mexico are the olive-green stretches of creosote.

spined Jumping cholla, *Opuntia fulgida*, many-colored tree cholla, and others of this well-armed genus are charter members of the Palo Verde-Bur Sage-Cactus association. Cholla does not "jump." But merely brush against the harmless appearing spines and not only will they pierce you but the loosely attached joints may break off as well.

4. Juniper-Piñon Woodland— Xerophytic Coniferous Forest

Scrambling up over flinty slopes, and swinging away across arid Upper Sonoran basins, the intriguing Pygmy, or Xerophytic coniferous forest, is so closely allied to the true desert that we cannot disassociate these dwarfish piñon pines and junipers

6—Fantastic variations of the desert "scrub" are the joshua forests, seen here in northwestern Arizona. Mojave desert's grotesque trees grow to great heights, are camera fans' inspiration.



from it. Here they range the brick-red hills and valleys below Oak Creek canyon, south of Flagstaff, Arizona. An open, rubble-strewn or grassy floor, bearing scattered succulents, cacti and yucca, that infiltrate from torrid reaches south, is characteristic of the Woodland Climax. And its Gambel's quail, collared lizards, and burro-eared jack rabbits are likewise reminiscent of the hot Lower Sonoran reaches.

5. Creosote Plain— Microphyll (small-leaved) Desert

Into the deepest sinks of the Mojave and Colorado deserts of California, across the glazed "pavements" of the Sonoran desert of southern Arizona and northern Mexico stretches the varnished green of the creosote bush. Often it takes along its partners, burrobush and teddy-bear cholla; often it goes it alone. Covillea grows surprisingly gay with golden bloom after intoxication by scant winter rains. In summer, should you lament the desolate appearance of this dark green sea during its drought-dormancy, consider that it has ranged far beyond the limit of aridity tolerated by most desert plants. Illustration shows it carpeting a gravelly wash near Wikieup, Arizona.

6. Joshua Forest— Temperate Semi-Desert

Relieving the monotony of the Desert Scrub or the wide Desert Grassland, fantastic forests of the Joshua tree present the most exotic scenery of the wastelands. Their spiny branches, grotesque arms and sturdy boles wrapped in rough hide-like bark, never fail to excite curiosity, even in a lone specimen. When their numbers are legion, and they march in outlandish armies over the pastelled hills, the landscape becomes other-worldly. Here their ragged ranks are arrayed east of the White hills in northwestern Arizona, near the great bend of the Colorado river.

7. Mixed Cactus Association and Desert Scrub— Western Succulent Desert

Across wide outwash plains and over rugged ridges that crowd upon the peaks of the Puerto Blancos, the Sonoran desert displays the multiplicity and wonder of its varied plant life. Here Organ pipe and Whisker cactus, Saguaro, Jumping cholla, Ocotillo and Palo verde mingle together close to the Mexican border. In spring the rocky floor is colorful with desert ephemerals. Desert big-horn, javelina or wild hog, and ante-

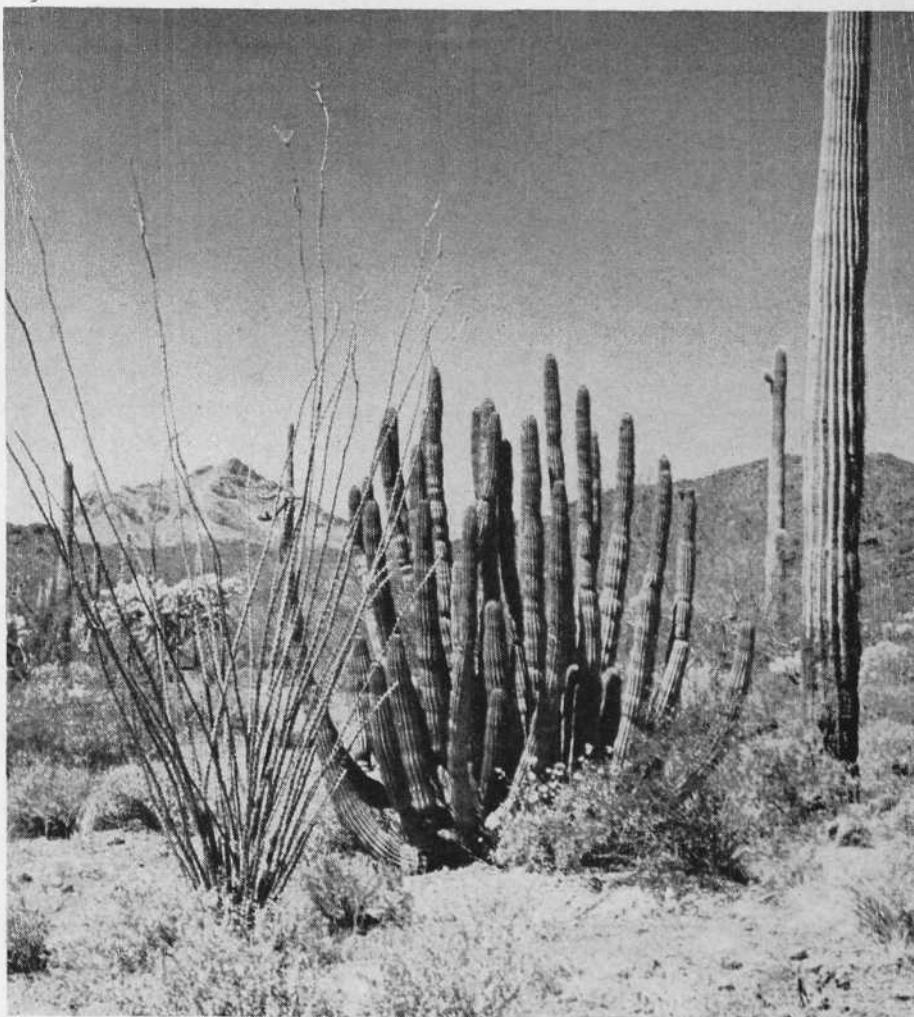
7—Organ pipe cactus associates with ocotillo (foreground), saguaro and cholla, near Mexican border.

lope once were abundant dwellers amidst this weird and exotic flora.

8. Oak Woodland— Xerophytic Deciduous Forest

This encinal woodland of dwarf evergreen oaks, trooping down the southern slopes of the Empire mountains, southeast of Tucson, and making savanna-like contact with the desert plains, is typical of the live oak belt that ranges the arid foothills between desert and mountain, and marks the Upper Sonoran life zone in southern Arizona. Bridled titmice, Arizona woodpeckers, and the Mexican screech owl are characteristic bird inhabitants, while the singular alligator-barked juniper and five-leaved Mexican nut pine are tree associates of these little broadleaf evergreens. South and east, the arid oak land merges into Desert Grassland that reaches away to the distant slopes of the Whetstones, Mustangs and Huachucas.

8—Dwarf evergreen oaks in southern Arizona are typical of Xerophytic Deciduous forest.



The Changeable Gilias

By MARY BEAL

THE GILIAS and their Phlox cousins familiar in our gardens have come back to us in a roundabout way. They first were collected by early European botanists from our Pacific states, then domesticated in English and Continental gardens. The desert claims a delightful array of other varieties which are just as well adapted to cultivation.

The genus was named for Felipe Gil, botanist and astronomer, who despite the Spanish version of his name was an Italian. The enchanting members of the genus are sparing of leaves but prodigal of their flowers. In lavish abundance they transform the dun-colored slopes of Ord mountain in central Mojave desert to a lacy glowing pink. Valley and mesa locations are more likely to display blue or lavender varieties.

Fascinating as are the Gilias in appearance, their variability creates trouble for the botanist. Much field and laboratory work has reduced this inconstancy into a working basis for identification. Dr. Willis L. Jepson's classification is used here.

More than a dozen species are found in desert areas, most of them annuals. Perhaps the most widespread is

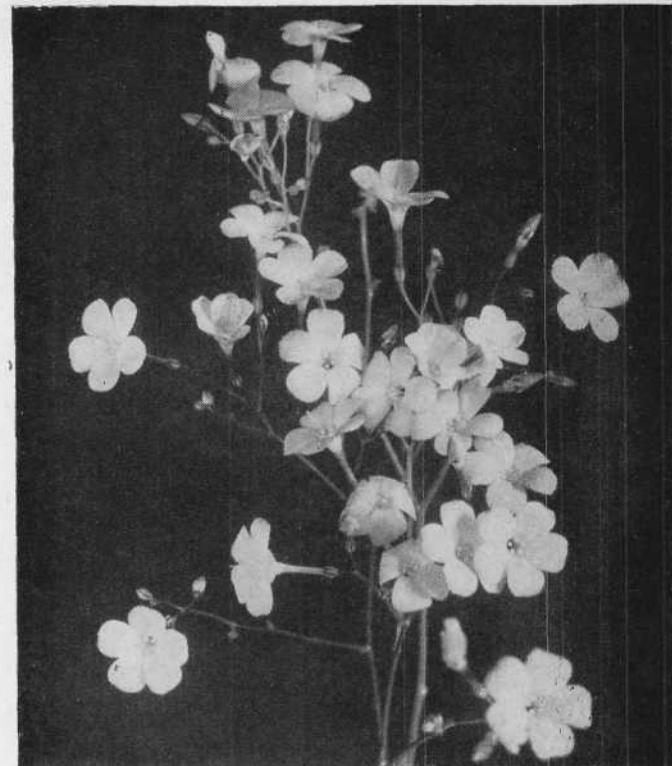
Gilia tenuiflora

Primarily a Coast range species but with several varietal forms which inhabit the desert. This is probably the most variable species. The general characteristics are—almost naked stems, 6 to 18 inches high, with ascending branches forming a loose panicle or cyme, the leaves mostly basal, sharply toothed or pinnately divided into toothed lobes, the herbage variously hairy or bald, often more or less glandular especially near the top, the flower buds furled up like fairy umbrellas, opening into funnel-form corollas with 5 spreading lobes, pink, lavender or blue, usually $\frac{1}{2}$ to $1\frac{1}{4}$ inches long, the slender tube purple and throat purple above a yellow or whitish band, or just plain yellow or white, the stamens blue or white, barely exerted or not at all, the style much longer, the calyx short, with pointed lobes.

The variety *davyi* is very attractive and quite frequent. It often has rather a bushy form, with several branching stems 8 to 12 or more inches high, the herbage likely to be hairless but glandular above. The strap-shaped leaves are fleshy, 1 to 3 inches long, with broad mid-rib and short toothed lobes. The fragrant showy flowers are an inch across and as long, rather closely clustered at the ends of the branches. The corollas usually are blue or purplish, rarely white, with short purple tube dilating abruptly into a very wide yellow or creamy throat which sometimes has 5 purple spots at base. The sharply-pointed calyx lobes have green or reddish mid-ribs bordered by white. Common on sandy mesas and flats in western and central Mojave desert, ranging north and east through Death Valley region, southern Nevada and Arizona. Should be in fine bloom in April.

The variety *latiflora* also tends to be bushy, with several to many stems from a few inches to over a foot high. The stems may be more or less glandular-hairy or hairless, branching above into a loose panicle, the flowers in open clusters or single, the leaves 1 to 2 inches long, the lobes sharply-pointed. The corollas usually are blue, purplish, or lavender, but occasionally pink, $\frac{1}{2}$ inch or more long, the slender tube deep purple, short or long, the throat with deep purple splotches (more or less confluent) above a yellow or whitish band. It frequents sandy plains and mesas up to 6000 feet in the Colorado and Mojave deserts, Death Valley region and Owens valley. Blooms April to June, according to altitude.

The lovely variety *speciosa* is usually somewhat taller than the others with several ascending branches, the leaves larger and less finely cut, 1 to over 3 inches long, the lobes usually 3-toothed, the longer calyx lobes have white-bordered green or red-



Gilia tenuiflora var. speciosa, from Ord Mountain in central Mojave desert. Photo by the author.

dish mid-ribs. The flowers are more closely clustered, $\frac{3}{4}$ to $1\frac{1}{4}$ inches long and as wide, the corollas pink, lavender or blue, the throat narrow. A mountain-loving variety, blooming in April and well into May, in the central and eastern Mojave desert.

The variety *sinuata* sends up from the compact basal rosette 1 to several erect low-branching stems 5 inches to a foot high (in favorable spots 2 feet), the herbage usually with loose tufts of wool and minutely glandular above or entirely so. The leaves average 1 to nearly 3 inches long, the lobes or teeth narrow and remote, the small flowers in an open cymose panicle, the corollas not more than $\frac{1}{3}$ inch long, with quite a patriotic assortment of color possibilities, red, white or blue, variations including pink and purple. Abundant on sandy valleys, flats and slopes in northern Colorado desert, Mojave desert and mountains north, from very low to high elevations, blooming from April to July.

The variety *arenaria* has one stem or several ascending from the base, 1 to 5 inches high, the stems and calyx densely glandular-hairy, the leaves shallowly-toothed to pinnately toothed, $\frac{3}{4}$ inch to $1\frac{1}{2}$ inches long, mainly in a basal tuft, the flowers lavender or pink, broadly funnel-form, $\frac{1}{2}$ inch or less long, on short pedicels. More of a coast species in California but very common on sandy mesas and plains up to 4000 feet in western, central and southern Arizona. Blooms from February to May.

Gilia latifolia

A sticky-hairy, ill-smelling plant, from a few inches to over a foot high, the main stem stout and rather short, with ascending branches from near the base, the whole plant glandular and almost shaggy with long soft hairs. The flowers small, less than a half inch long, but glowing like bright pink stars, usually a deep gorgeous pink, above a white tube. Calyx teeth are edged with pink and the thick leaves, ovate to orbicular, also are pink-edged, the coarse prominent teeth or lobes cuspidate, the blades varying from 1 to over 3 inches long, growing mostly on the lower half but not in a basal tuft. Habitat varies from sandy plains and canyon floors to rocky mesas, from below sea level to 4000 feet. Often locally abundant in Colorado desert, central and eastern Mojave desert, through Death Valley and adjoining areas to southwestern Utah and Arizona. Blooming season from March to May.



Mormon Tea, *Ephedra nevadensis*. Used as substitute for tea, considered an efficient tonic. Contains the alkaloid pseudoephedrine.



Yerba mansa, *Anemopsis californica*. Has popular reputation as a blood purifier and all-around remedy.

Yerba santa, *Eriodictyon trichocalyx*. Prompt efficient remedy for coughs. It masks bitter taste of quinine.



It all started when Jerry Lauder-milk decided to take a walk along the Hassayampa river. For there he saw an old Indian woman in blue and white bandana absorbed in digging small white-flowered plants. His curiosity was so aroused by her intent manner that he had to learn her purpose . . . And Joe Aguilar told him. Before the white-mous-tached old shoemaker had finished, Jerry had collected enough plants to start a drugstore. That's just what these desert plants represent to the Indians and Mexicans to whom Aunt Rosa sold them. And now that war prevents importation of many common drugs, we can expect to see more and more of these native drugs transferred from the "Indian drugstore" to the one around the corner.

Desert is an Indian Drugstore

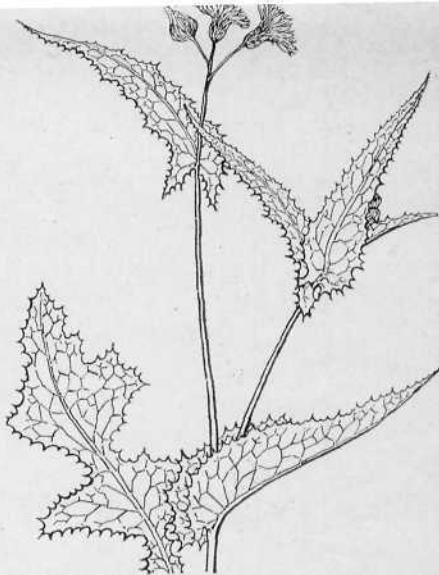
By JERRY LAUDERMILK

Drawings by the author

HEAT OR NO HEAT, I was out for a hike, on the trail of one of those "petrified" woodpecker's nests you sometimes find in dead Saguars. I was taking a new route out of Wicken-burg, Arizona, towards the Hassayampa river and the foothills on the opposite side. It was what I called a "glorious" day but the kind that made oldtimers sit in the shade and cuss the heat.

At one of those cool damp places along the river where the water comes close to the surface and little blue butterflies con-gregate, a picturesque old woman who ap-peared to be either a dark Mexican or an Indian was digging small attractive plants with white flowers. She was so absorbed in her work that I slipped away quietly without being noticed. But I was determined as soon as I reached town to find out her purpose with the flowers.

One of the few cool spots in Wicken-

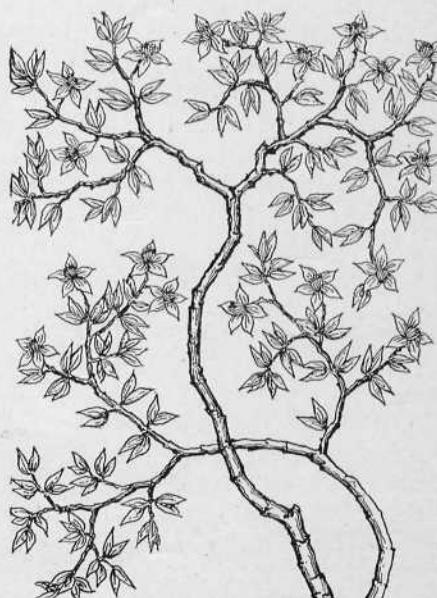


Southistle, *Sonchus oleraceus*. Infusion of leaves causes a fever to "quietly depart." Give hot water most of the credit.



San Juan tree, *Nicotiana glauca*. Argentine immigrant containing considerable nicotine. Used as headache remedy.

Creosote bush, *Larrea mexicana*. Considered good for lung trouble, except asthma. Strong doses are emetic. Is antiseptic.



burg where I could loaf was Joe Aguilar's shoe shop. Here could be heard legends and strange tales of other and wickeder days when Wickenburg was tough. If anyone would know why an old woman dug white flowers on a hot morning it would be the white-moustached old shoemaker.

It was not only cool but also rather dark and smelly in Joe's place. The sour aroma of the tub where he soaked his leather combined with the smoke of Durham cigarettes in just the right proportions to make the place smell exactly the way it should—in Arizona. After the usual preliminaries about the weather and health, I gradually circled in on my subject. "Joe," I said, "this morning I saw an odd-looking old Indian woman digging plants down by the river—small plants about so high with white flowers and shiny green leaves. What do you suppose she wanted them for?"

Joe looked up, all interest. "Did she have a blue and white bandana 'round her head, folded neat?" I remembered that she had. "Well, that was my Aunt Rosa. I am a Mexican but Rosa has much Indian blood. She's old and knows much old stuff. That plant she gathered was Yerba mansa, a very good medicine plant, very strong when you dig it toward noon on a hot day."

He went on to tell me about his aunt, "a very smart woman." How she had been the local herb doctor to the Mexican population for years and knew the proper plants to use for nearly every ailment. There was some use for almost everything that grew. Many useful plants grew close by. Some were to be found nowhere except in remote canyons and there only in limited areas.

To be an herb doctor, you must know where to look for your herbs, the right season and the right time to gather. After your herbs were once gathered you were just ready to go to work. Plants had to be dried and stored in exactly the right way to keep their strength as long as possible. Some drugs like barks and roots kept well for years but others, especially dried flowers, grew weaker month by month. The packages of dried herbs people bought at the drugstore were a joke to Joe's Aunt Rosa. She "had no English" and liked to be by herself and think. It was just as well I had left her alone.

In nearly every Mexican community lives someone who is the accepted authority on plant medicine. The herb doctor usually is a woman who learned her art as a girl by practice with some old woman. They aim for results and make no effort to discover why their remedies work. The average herb doctor never has heard the words "alkaloid" or "glucoside" although many of their plants are rich in them. Nine



Little wild gourd of the desert, Cucurbita foetidissima or Mock Orange. Makes a good soap substitute if you can stand the smell. Its species name means just what it says—the rankest of the rank.

times out of ten they have no other pharmacopoeia than the herb lore stored in a good memory. They seldom have any secret cures but may have their favorite remedies, their old stand-bys.

Joe had lived with his aunt for many years and so had come to know a great deal of desert herb lore. When he learned that I was a pharmacist myself and had an interest in drugs, his little cobbling shop became a kind of unconventional school of herb-ology. He called the desert the "Indian drugstore" and as he said, "they knew how to use it."

A few days after the event of Joe's Aunt Rosa, I hiked out to my cousin's ranch. On the way back to town I collected a couple of specimens. One of these was Creosote bush. Of course I had noticed it before, there is so much of it. It is the most abundant shrub on the Arizona desert. According to Joe, this plant, which he called Gobernadora (the governor's wife) was a remedy for tuberculosis and some other pulmonary troubles—but not for asthma. He was emphatic on this point. You made a brew of the twigs and leaves and it had to be just the right strength or instead of staying down and curing your cough it would "turn around" and act as an emetic. Gobernadora was good for you inside and out. A strong wash, black like coffee made wounds heal very quickly. The gum that accumulated on the surface of the water when a large quantity of twigs and leaves was boiled made a good waterproof cement. This was a good plant and it was lucky that it grew so profusely.

According to Joe his Aunt Rosa sold lots of Gobernadora, which seemed odd to me. It grew wild right in town, so why should a person pay for something he could gather free. His answer was that it was too much "trouble" to collect and dry your own herb when for *dos reales* (two bits) you could get enough to last you a long time and already prepared by an expert.

"You must have hunted plants with strong smell," was Joe's remark when I handed him my second specimen. "This is Marruju, a good thing for homesick people to smell, it makes them feel all right again and they forget all about home." This remarkable plant was good for other things than dispelling "dark humors." The crushed stems made into a strong decoction became a powerful antiseptic. This probably is true, as the plant is rich in a peculiar essential oil. A drink prepared from Marruju was supposed to produce a condition like second sight but when I wanted to try its effect on myself Joe didn't know the dose. People had died from Marruju although it didn't rate as a poisonous plant. It is an interesting fact that this plant belongs to the same family as oranges and lemons. The fruit, which is no bigger than a pea, is bright yellowish-green and looks like a little orange.

My interest in the subject of medicinal desert plants had roused a similar concern on Joe's part. He hadn't thought much about them for several years and decided to see how much he had forgotten. We would take an afternoon off and search out some of the "good" plants in their natural surroundings.

Joe headed his two-man expedition in an approximately northeast direction. He said we would hike out only about three miles over the mesas, then circle back by way of the washes and the river. This way we would see them all since certain plants grew only in certain environments. You wouldn't, for example, expect to see dainty little Yerba mansa growing up on a mesa alongside Saguaros and Chollas.

On the low mesas and foothills along the Hassayampa there is a regular park which extends for miles and probably is one of the best displays of desert plants in Arizona. The commonest, of course, was Creosote bush—it was everywhere. Then there were the Saguaros—not medicine but food when the fruit ripened. The fantastic Jumping chollas grew so thickly in places that sometimes a wide detour was the only way to get ahead. Even this devilish cactus which carries meanness to the point of being ridiculous had its uses. According to Joe Americans sometimes made ornamental knick-knacks and walking sticks from the seasoned, openwork wood of the dead stems.

Then there were many plants of the

Ocotillo. A strong extract of the root could be used like a liniment for aches and pains or fatigue in general.

Another plant that grew abundantly in thickets when it did occur—you might hunt for weeks without seeing a specimen—was the Jojoba bean. Joe's manner when he found some old plant acquaintance of famous reputation was always a study in expansive pride, even gusto, as if he were introducing one of his family. "Now this one, my friend, is very, very good. She is called Jojoba (hohóva). She is not a medicine but better than chocolate or coffee and very rich." Mexicans sometimes roast the beans which ripen in winter, grind them to a fine meal and boil. This makes a good coffee substitute but has a peculiar flavor.

Another vegetable friend was also the source of a beverage as well as a potent drug. This was Canutillo or Mormon tea. The plant looks like a small shrub made of green switches. On close examination tiny leaves like scales can be seen on the new branches. The twigs and small branches dried and infused in water make a beverage which tastes much like tea. Strong infusions are said to be potent as a blood remedy. The plant contains the alkaloid pseudoephedrine, cousin to the alkaloid ephedrine, a powerful drug.

While we rambled through this natural botanical garden, Joe told me some curious things about the old-time Indian doctors. He had lived among some of the Colorado river tribes around Yuma in his younger days and had a good memory. Some of the Indian remedies were strong drugs, others "by golly, took a lot of prayers to make them take hold." It was a question with Joe whether imagination and large quantities of hot water didn't have a lot to do with it in some cases, for some of their brews were no more powerful than teas made from corn-shucks.

Most of the herbs his aunt used did their work without any help from psychology. Of course she might toss in a prayer or two if her customer was inclined that way but a good drug produced results even if you took it by accident or if someone put it in your food without your knowing it. He knew of an herb that sometimes was used in this way by "bad" people.

On our way back we found the plant growing on lower ground. It had big velvety leaves, purplish stem and a peculiar narcotic smell. The flowers were closed at this time of day but I could see that they would be large white trumpets when they opened. Here was a plant that was both good and bad. This was the magical herb Toloache (I-bow-my-head-in-reverence) used by the Indians in religious ceremonies

and for the treatment of several ills. In olden times the Indians used to make a perilous drink by pounding the whole plant and steeping the bruised stems, leaves and flowers in water. This drink gave one the power of foretelling the future. It also produced visions of the other world. But its use was exceedingly dangerous, liable to cause blindness and insanity. Aunt Rosa used only the fresh leaves which were applied as a poultice for relief of pain. It was very effective. Sometimes the dried leaves were smoked for the relief of asthma but this also was risky since the plant contains large amounts of some very powerful alkaloids including atropine and daturine. Joe wouldn't tell me about Toloache's bad uses as he said the fewer people who knew such things the better.

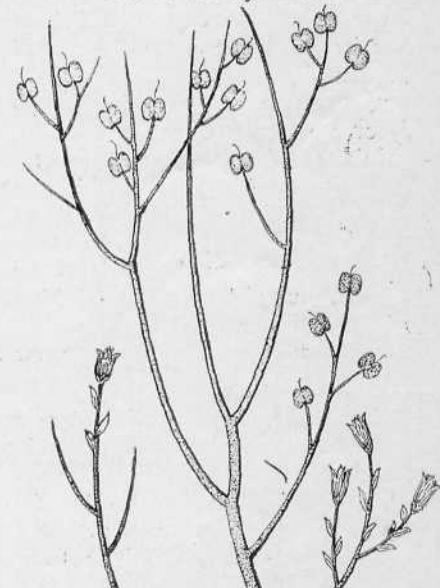
Then he showed me Yerba mora or death-plant. This is a species of belladonna or nightshade. His aunt powdered the dry leaves and made them into a plaster with olive oil. This, like the old-fashioned belladonna plaster, was used for the relief of any kind of muscular ache or pain. The nextdoor neighbor of questionable Toloache and Yerba mora was benevolence in vegetable form.

Here were some dark green, woody shrubs with shiny leaves. In fact, the upper surfaces of the leaves, their "faces" as Joe called them, looked as if they had been varnished. The backs were grey and furry. The clusters of dainty, pale lilac-colored flowers looked out of place on such coarse stems. Later, I found that this plant belonged to the same family as "baby blue-eyes" and so came by its flowers honestly. Joe called it Yerba santa, or holy herb. This was the trusted panacea for tuberculosis or any kind of cough. You made a tea of the dried leaves. It couldn't hurt you and was practically certain to do you good. Oldtimers sometimes used Yerba santa as a beverage. When lemon juice is added to the clear yellow infusion it produces a remarkable result. The brew instantly becomes white and opaque as if cream had been added.

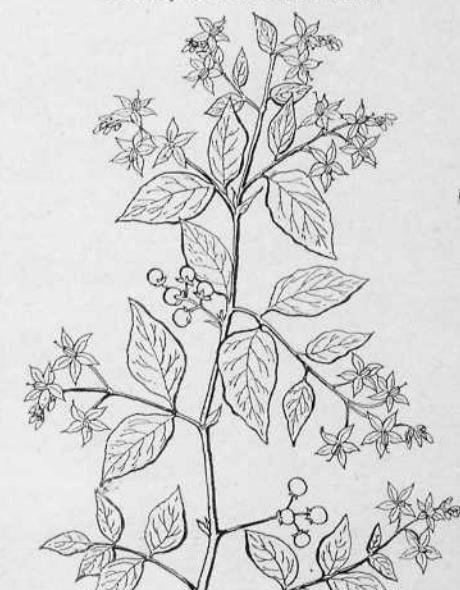
We encountered many interesting plants along the wash. One of these was a coarse weed and a natural soap substitute. "There's Cabazillo," Joe said, pointing out a plant I always had called "mock-orange." It is not confined to the desert but grows along the roads in sandy places. Nearly everyone has seen these spreading, squash-like vines with their coarse leaves and



Toloache, *Datura meteloides*. Banishes pain, produces strange visions, can be deadly narcotic.



Turpenine broom, *Thamnosma montana*. Used by Indians to produce visions, cure stomach ache.



Nightshade, *Solanum douglasii*. In poultice form relieves neuralgic pain. Has high percentage atropine and hyoscyamine alkaloids.

stems. Sometimes the ground is covered with the yellow gourds which give it its mock-orange name, "mock" because of its extreme bitter taste and rank odor. The crushed root makes a superior soap. In some parts of the country the crushed fruit is thrown into pools to poison fish. Fish stupefied by this plant are quite wholesome since the action of the poison, saponine, is only temporary.

At the outskirts of town I noticed a plant with magenta-colored blossoms growing among the rocks and boulders. It looked almost like the old-fashioned four-o'clocks of my grandmother's garden. In fact, it was a very close relative. I never supposed such a plant would have any medicinal value but learned that it had several uses. The root was said to produce visions and also had a more prosaic use as a cure for stomach ache.

Joe began to point out plants which he said "liked to live around people." Although he didn't know it, these were not natives but immigrants that had been adopted by the Indians once their good qualities had been learned. In most cases these plants have been introduced accidentally or are fugitives from cultivation. One of these is San Juan tree or tree tobacco, a native of Argentina. This is a large loose-limbed shrub with shiny green leaves and yellow trumpet-shaped flowers that bloom the year around. The Mexicans say that the bruised leaves placed behind the ears and tied at the temples with a handkerchief cure a headache within a few minutes.

Another of these naturalized foreigners was an interesting plant with curiously notched leaves and yellow flowers like dandelions. Joe called this plant "Yerba de leche." Its common name is Sowthistle. The dried flowers were a remedy for fever which would "quietly depart." This was the end of the herb lesson and although Joe promised to show me some of the rare plants that grew in out-of-the-way places he never got around to it and I had to be content for the time with this small sample of Indian herb-lore as handed down by the Mexican herb doctors.

Many Indian remedies have been adopted by modern pharmacy such as Cascara and Yerba santa from our own Southwest and many others including quinine from Mexico and South America. Now that the war has made it almost impossible to obtain many of the common drugs, much research is being done with plants from all parts of the country. Curious facts have been discovered. For instance, one of our common species of wormwood contains small amounts of quinine. Other herbs will no doubt yield secrets as valuable. Eventually we can expect to see other drugs transferred from the Indian drugstore to the one around the corner.

DESERT QUIZ

This month's desert test is designed especially to check up on all you Sand Dune Sages—to find out not only how well you are digesting your Desert Magazine but to learn if you are keeping up on your supplementary desert reading. Nearly all the answers have appeared in Desert Magazine at some time or other, but some must have been gleaned either from personal experience and observation or from reading good books on the Southwest. Subjects covered include history, Indian lore, scientific studies of the desert, botany, mineralogy, lost mine tales, literature of the Southwest, geology. If you score 15 or more correct, then keep your SDS rating. If you answer between 10 and 15 correctly, you can append to your letters "Desert Rat." But if you fall below 10 right answers (or lucky guesses), you'd better do some studying. Answers on page 33.

- 1—Man responsible for naming of Colorado desert is—George Wharton James..... Wm. P. Blake..... Gen. Stephen Kearny..... Maj. John Wesley Powell.....
- 2—When a Navajo refers to a Bilakana, he is referring to—An American..... Balky horse..... Indian trader..... Pack saddle.....
- 3—Baron of the Colorados was—A fictional character..... Don Miguel de Peralta..... James Addison Reavis..... Mojave Indian chief.....
- 4—Dendrochronology is of greatest importance to—Astronomers..... Farmers..... Hydrographers..... Archeologists.....
- 5—Southwesterners associate Fewkes, Bandelier, Kidder, Morris and Hewett with—Exploration..... Archeology..... River development..... Boundary surveys.....
- 6—Mescals which Marshal South and his family on Ghost Mountain use for food and fuel are known to botanists as—Cereus giganteus..... Agave deserti..... Yucca whipplei..... Nolina parryi.....
- 7—The number of varieties of quartz is about—Four..... 15..... 60..... 200.....
- 8—Lieut. Edw. F. Beale brought his camel caravan to the Southwest in—1832..... 1857..... 1888..... 1905.....
- 9—If a friend took you to some Tinajas, you probably would—Eat them..... Drink from them..... Watch them graze..... Relax in them.....
- 10—Rate of evaporation varies in local desert areas, but in general the annual evaporation in Southwest desert is—85-120 inches..... 45-75 inches..... 150-185 inches..... 20-45 inches.....
- 11—First name of Pegleg Smith, for whose "lost mine" treasure hunters still search, was—Thomas..... Jedediah..... John..... Hiram.....
- 12—To send a letter from St. Louis to San Francisco over southern route through New Mexico, Arizona and Colorado desert in 1858, required—90 days..... 75 days..... 50 days..... 25 days.....
- 13—One point possessed in common by Screwbean mesquite, Palo verde tree, Smoke tree and Ironwood is—Color of flower..... Family..... Shape of leaves..... Common medicinal property.....
- 14—Carnelian is a type of—Jade..... Quartz..... Coral..... Garnet.....
- 15—First sheep were brought to the Southwest about—1540..... 1598..... 1620..... 1732.....
- 16—Typical Hopi pottery is—Black..... Apricot..... Brown..... Red and tan.....
- 17—"Tombstone, An Iliad of the Southwest," was written by—Wyatt Earp..... Zane Grey..... Walter Noble Burns..... Harold Bell Wright.....
- 18—Butch Cassidy's real name is said to be—Bill Carver..... Harry Logan..... Jim Lowe..... George Parker.....
- 19—Penitentes are—Spanish-American religious sect..... Certain officials of Catholic church in New Mexico..... Yaqui Indians who take part in an Easter ceremony..... Indian pilgrims to the salt mines.....
- 20—Pisgah crater is nearest—Barstow..... Needles..... Twentynine Palms..... Ballarat.....

The South family live in a natural desert garden. And although they are satisfied with most of Nature's handiwork, they decided to do a little landscaping. Rider and Rudyard in the role of scouts searched for a couple of "artistic" yuccas to plant before their adobe home. The specimens finally located, the expedition set out to bring them back on a homemade stretcher. It was a long and arduous trip, leading them to the foot of their mountain fastness. Rudyard, who claimed credit for the discovery, puffed up with importance as he stood before his finds, persuasively asserting they could be "twansplanted to unparalleled adwantage." Tanya conceded they were "artistic" but pointed out they must be at least 250 or 300 years old. Marshal sounded the final discouraging note when he estimated their weight to be not over a ton and a half each—a mere trifle for their two-man-power stretcher to bear up Ghost Mountain trail!

Desert Refuge

By MARSHAL SOUTH

WE HAD thought wistfully that spring was hiding just beyond our mountain crest. But, as Rudyard puts it pithily, "Evidently we thought a lie." For instead of the glad-eyed Indian maiden with flowers in her hair, it was fierce old War Chief, Winter, with his glittering arrows and shaking white plumes who leaped upon us from ambush beyond the rimrocks. Savage his war whoop and savage also his hundreds upon hundreds of fierce braves who came racing at his heels upon their crowding horses of cloud. The junipers whistled and bowed to the charge. The whirring arrows of ice shivered and splintered upon our walls and low-hunched roof. Long and bitter was the attack—while we, who had dreamed of spring, crouched before the red leaping flames of our great fireplace. Yes, evidently we had "thought a lie."

But hard on the heels of the storm furies came the snow fairies. And there was reward. Our trio of youngsters love snow and they greeted the glittering world with shouts of delight. Somehow, under a blanket of snow, Ghost Mountain is breathtaking. Perhaps because of the startling contrast to its usual vivid sun-soaked coloring. In their foreign trimmings of ermine the mescals and chollas and bisnagas and ocotillos assume a fairy-like unreality, like growths in an enchanted world. In the crisp white blanket that covers rocks and gravelly earth the tiny tracks of birds and the scribbly scurrying of mice are like the footprints of elves. And over all, the sparkle of the desert sun and the cloudless arch of a turquoise sky.

"But it goes so quickly," the children lament, as they race excitedly through the shallow drifts and pelt each other with fluffy snowballs. "Oh look! It's melting so fast!"

Their regret is genuine. Their unclothed bodies glow with the healthy exposure to sun and crisp air. It is only when bare feet and eager fingers become too chilled for comfort that they make brief dashes back into the house to warm up. But only brief ones. Snow-time is too precious to be wasted indoors.

Besides, snow and ice mean the possibility of home-made ice cream. And that most delicious of all treats—honey poured over a bowlful of snow. Then, too, there are snow men to make. And snow to bring in in pots and melt over the fire—just to see how the Eskimos do it. Yes, snow is popular at Yaquitepec when it does come. "When I grow up," says Rudyard, carried away by temporary enthusiasm, "I am going to the North Pole to live."



Rider and Rudyard choose a site for the snow man.
Yaquitepec on top of Ghost Mountain wears its winter white.

But the snow fairies have gone now and have taken their magic with them. Once more the sun-sprites and the laughing brown elves of the wasteland hold sway. Grass is greener and taller. The sun stands higher in the sky. And it is warmer. For this year at least Chief Winter has made his last big raid.

"But when summah comes how will you bake thee beans and thee bread?" inquires Victoria, pausing long enough in a rapid-fire recitation of the alphabet to ask the anxious question. "Because if we doant have great big fires we woant have such lots of hot coals to bury thee bean pot in at night. And there woant be any more baked beans." She looked doleful. Baked beans, seasoned just so, are Victoria's especial weakness.

"You don't have to have roaring fires in order to bake beans, ignorwamus," said Rudyard impatiently. "Beans can be baked in—in mul-ti-tu-din-ous ways." He drew a deep breath after the effort of the word. "They bake beans even in Boston," he added as an afterthought.

"But somehow they don't taste as good," Tanya said. "There's always a *something* about our winter-baked beans."

And it is true. For the bean is a temperamental entity, despite its humble station. Its possibilities are too little appreciated. For, like the toothsome mescal heart, the bean requires long slow cooking. By a wood fire, of course. The quality of the heat vibrations given out by various fuels and heat-making methods are very different.

So in this matter, as in many others, a little back-tracking from modern illusions is in order. Back to the pit ovens of the savage. Or to the old-fashioned bean hole. Provide yourself with a cast-iron pot or dutch oven, with a close-fitting iron lid. And, having measured into it the desired quantity of beans—pink beans or any other variety you favor—fill it generously with water. To this add seasonings, a matter for individual preference. For this is where the art of cookery comes in.

Chili—the inner pulp scraped from whole well-steamed Mexican red chilis, if you can get it—takes first place. Then garlic—not just a whiff, but a generous helping of chopped garlic cloves. The garlic is one of the most healthful things provided by Nature, a system purifier and a potent agent for the relief of high blood pressure, as well as being the possessor of many other sound virtues. Then put in your tomatoes—be generous with these too. Then salt, and any other seasonings and herbs that your personal tastes and experience dictate.

If you are a vegetarian you will find that you have ample scope among natural herbs and seasonings to prepare a bean pot that will be second to none. But if you are not a vegetarian you may like to add some diced bacon or some salt pork. And a goodly measure of beef fat rendered from suet will add body and flavor. And finally, when you have performed all these rites (good cooks have first to be born, then perfected by a lifetime of devotion) you hie you away to your pit oven, a homely gadgetless hole in the ground in which a good fire has been blazing for an hour or so. And there, scraping aside or lifting out, with a shovel, the glowing coals and hot ashes, you bury

your tightly covered and water-filled bean pot in the hot mass. Cover it up with coals and ashes and finally heap the earth over it. Then you go happily away and forget it for 12 or 16 hours or so—longer if you want to. And then—

But why anticipate the gates of paradise? He who with a healthy outdoor appetite has not experienced the thrill of digging up a properly prepared bean pot and lifting its lid, he who has not sniffed its delicate odor of indescribable allure, has not really lived. Empires have fallen and thrones been overturned for much less. (Oh yes, we know that some cooks put molasses in bean pots. To desecrate real beans, especially the Mexican *frijole* bean, with molasses should be a matter for a 'dobe wall and a firing squad at sunrise.)

But it is not only perfectly cooked beans that are a product of our big winter fires. There is bread too. Not summer bread, but winter bread. For in winter Yaquitepec thrives upon a special variety of hard bread—a bread very different from the pale blown-up product, a loaf of which Mayor La Guardia once crushed together in his hands as he made the angry denunciation that the people were being fed wind. For our winter bread at Yaquitepec is made without yeast or leavening agent of any kind. It contains simply flour, salt and water. Positively nothing else. Kneaded together in a rather moist dough, the loaf filling a big cast-iron dutch oven about two-thirds full, it is set upon the hot ember-cleared floor of the fireplace at night. And around it—very close but not touching—the glowing coals and hot ashes are arranged in a high, encircling bank. For bread, we do not use the tight-fitting pot cover. Instead the loaf is covered by a loose iron plate which rests irregularly upon the rim of the pot and lets the steam from the baking mass escape. Also we provide for better circulation of heat by keeping open, doughnut style, a round hole in the center of the loaf, by means of a collapsible tin tube, fashioned from an empty tin can.

With the ring of embers arranged about our great loaf, and with a few chunks of burning wood upon its flat iron lid, we go blissfully to bed. In the morning our loaf is done. Solid? Yes, it is solid. But it also is remarkably healthful and sustaining. Especially since it is made from homeground, unrobbed whole grain flour, mostly in a combination of one-third wheat and two-thirds rye. The critic who once said, scathingly, that for many years the public had developed the fashion of demanding harder and harder butter upon softer and softer bread, would have no cause for complaint with this.

The one gap in the otherwise perfect wasteland view which unrolls from before our windows has been filled. Perhaps it wasn't really a gap except in our imaginations, but it bothered us. We felt there ought to be yuccas growing in that particular spot. And there weren't any. A long while the lack has irked us. The natural thing, of course, was to move some yuccas to the spot. But yuccas, even though they look so coy and disport themselves in the grass skirts of hula girls, are in reality very serious things, and as hefty as lead elephants. So for a good many winter-spring seasons we have dodged the issue. This year, however, we decided to do something about it.

There are plenty of yuccas on our personal Ghost Mountain domain. But we wanted particular ones to fit the particular need. So Rider and Rudyard were sent out as scouts. They were gone a long while, but finally returned to report that finding the right kind of yuccas wasn't nearly as easy as it might seem. However, they believed they had located a pair. But they were not on the summit of the mountain. They were down at the foot of it.

This was discouraging. But remembering that the mesa-top Pueblo Indians of New Mexico used to stage races up their precipitous trails, carrying sheep upon their shoulders, Tanya and I decided that we ought to be able to carry up yuccas, one at a time, on a sort of ambulance stretcher slung between us. So the following day, guided by our scouts, we went down the trail carrying a pick and shovel, some coils of rope and two long, supposedly strong, poles of "civilized" wood from which to

fashion the carrying stretcher. Finally, out on the lowland, Rider stopped and pointed:

"Those are the yuccas," he said. "Those two on the outside edge of the bunch."

"And I found them," Rudyard hastened to add. He puffed up with importance. Then, sensing something from the expression of our faces, "Don't you think they are awfu'y decorative?"

"Well, yes," Tanya admitted. "They are *that*, it is true. But . . ."

"An' they're young an' vigorous," Rudyard hurried on in breathless persuasiveness. "They can probabaly be twansplanted to unparalleled adwantage. And . . . Why, what are you laughing at?"

"I don't quite know," Tanya choked. "But perhaps it's because I'm afraid that these young yuccas of yours may be *too* young. This one here can't be more than 300 years old. And the other not a day over 250."

"And neither of them weigh over a ton and a half—if as much," I pointed out.

"Well, suppose," said Rider, grinning mischievously, "you try to locate some. We ran all over the map. And these were the best we could find. All the little ones are too small. You said you wanted 'artistic' yuccas."

"I know. I know," Tanya said consolingly. "We'll all look."

So we all looked. Up and down and in and out. We disturbed several jackrabbits and one coyote. We found all manner of things that we weren't looking for—dim, long-abandoned mescal roasting hearths, weathered sherds of ancient pottery, swarms of bees in hollows under rocks. But no "artistic" yuccas—that is, none that we could carry. Hope went down. So also did the sun, dropping lower and lower in the desert sky.

And then, just as we were on the point of abandoning the quest, we located a couple of suitable specimens—at least they were the best we could hope to find. They were a long way from our trail. But we dug them up—an easy matter, since the earth was still loose and moist from the recent rains. With much haste we constructed a stretcher from our ropes and poles. Loading one specimen we started for home. A few steps and the poles—the only ones of their kind in all our district—broke.

"And now what?" Tanya asked, surveying the wreckage.

"Nuffing," said Rudyard glumly, "just nuffing! I am afraid we are utterly fwustwated."

"Frustrated nothing!" Rider snapped. "Let's get some mescal poles."

So we ranged the surroundings and brought back several of the toughest looking, long, dead flower stalks of mescals that we could find. We tied them together with fibers and re-made our carrying stretcher from them.

With Tanya and me bearing the prone yucca between us, we climbed the trail. Just as the sun was setting we planted our burden in the hole which we previously had prepared for it, and watered it generously. And next day we went down and brought up its mate and planted that too.

So now there are two yuccas growing, where no yucca grew before. At last we are satisfied. For they are, as Rudyard says, quite an "acksquisition" to the landscape.

FREEDOM

*No man is free, save he is free at heart.
Free from the yoke of copying and leaning,
Free from the need to play a worldly part
Of rigorous convention, or of preening.
True freedom is a spiritual thing,
It means a self-sufficiency of soul.
And they who to some outer "form" still cling,
Are slaves to that—and are not free at all.*

—TANYA SOUTH

HERE AND THERE... on the Desert

ARIZONA

Treaty to Settle Water Disputes . . .

PHOENIX—United States and Mexico in February signed treaty for conservation, distribution and use of the waters of Rio Grande, Colorado and Tijuana rivers, which would affect most of Southwest states and provide for final settlement of long standing interstate and international water disputes. State department described step as "outstanding example of what can be attained when two countries decide to resolve their differences, however difficult, on the basis of what is to be the best advantage of all concerned." Treaty provides for administration by international boundary commission, to be known hereafter as "International boundary and water commission, United States and Mexico."

Bigger 'n Better Dig-n-Dogie Days . . .

KINGMAN—Cowboys and bucking steers will have plenty of room next fall during Dig-n-Dogie Days. Work on new and larger field, to accommodate horseracing and rodeo events, was started in February by Mohave county livestock growers association northwest of town.

They Have a Name for Them . . .

WINDOW ROCK—It may sound funny to you, but "Naltsos indah-ne-gi" has a special meaning for the Navajo. It is the means by which they are helping their young men on the fighting fronts to return home—"an important paper that is to be bought." We call them War Bonds.

Australians See Sand Painting Art . . .

FT. DEFIANCE—Corp. William McCabe, whose wife and baby son live here, is giving Australians samples of Navajo art. Lacking sand, he has been using crayons and watercolors to produce Navajo "sand paintings." He formerly studied art at Colorado college, Colorado Springs.

Chiggers' Kick is Legal . . .

GRAND CANYON—Being a legally domesticated animal a mule is entitled to at least one good kick, according to ruling of Federal Judge Leon R. Yankwich in dismissing \$7,000 suit against Fred Harvey company by Elmer H. Mateas, heard in Los Angeles. Mateas claimed he was riding down Bright Angel trail on a mule named "Chiggers" when he was thrown to ground, received spinal fracture. He claimed the guide had control of the mule, guide claimed Mateas had control, but judge said apparently the mule had control of the situation, and dismissed the case after upholding mule's legal right to one kick.

Mexican Cacti Found Infected . . .

TUCSON—A bacterial rot disease which has been attacking Arizona giant saguaro cactus now is prevalent in the Mexican stand on Rocky Point highway, seriously affecting the Organ Pipe and Senita cacti, reports Dr. J. G. Brown, University of Arizona plant pathologist.

Papagos, Bond Champions, Indignant

SELLS—Residents of Papago Indian reservation here are on a verbal warpath following claim of Palm Springs, California, to be "first in state to have reached fourth war loan quota, first in nation to double it, and only community to have trebled it." Papagos bought \$30,000 worth bonds and stamps—600 per cent over their \$5,000 quota.

Waterlevels Given by Remote Control

PHOENIX—Electrical shortwave broadcasts now give automatic record of runoff on watershed of Salt river valley, as result of idea projected nine years ago by J. A. West, chief hydrographer of Salt river valley water users association. Three instrument companies in 1938 started to work on West's idea, this year one company submitted instrument which was tried for 60 days and found successful. Verde river transmitter station has antenna mounted on 65-foot poles; aerial on Tonto creek is swung between canyon walls 200 feet above stream. Electrical shortwave broadcasting instruments are connected with the river gauges and automatically at any given interval send signals to Phoenix, recording water stage in either stream. Formerly Phoenix was dependent on telephone calls from observers; usually when information was most needed weather conditions had cut telephone lines.

Gets Silver Fished from Pearl Harbor

PHOENIX—At ceremonies observing Arizona's 32nd birthday in February, a part of the silver service which had been given by Arizona school children to USS Arizona at its christening was presented to Governor Sidney P. Osborn. Tarnished with salt water, the service had been recovered from the bottom of Pearl Harbor.

Justice of peace, Flagstaff, performed marriage ceremony in February for Harry Blackhorse and Jane Redhouse, Navajo Indians of Kayenta.

Ignacio Bonillas, 86, Mexico's ambassador to US during first world war, died in Nogales January 31. He was American-educated, was owner of extensive properties on both sides Mexico-US border.

CALIFORNIA

Air Academy to be Suspended . . .

TWENTYNINE PALMS—Leading "industry" at this desert oasis, Air Academy for primary training of cadets, is scheduled to suspend operations shortly, according to report from Congressman Harry R. Shepard. Any future use of base by army is still undetermined.

**29
PALMS
INN**

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PALMS

• • •

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The OLD MEXICO SHOP
D SANTA FÉ—NEW MEXICO

Drilling Equipment Disappears . . .

BORREGO—Vandals have stolen pumps, engines and other material from a new oil drilling plant near Ocotillo in Borrego valley, according to complaint filed with San Diego county supervisors by A. C. Routhe, Los Angeles, official of Borrego Valley land company. Complaint has been referred to Sheriff Bert Strand.

Guayule Drain Stoppers Made . . .

MANZANAR—Sample drain stoppers produced entirely within this Japanese relocation center from guayule rubber produced here, were exhibited in mid-February. Guayule plants are being developed in camp experimental nursery and 10-acre farming plot, processed in two mills here under varied conditions.

29 Palms Elevation Determined . . .

TWENTYNINE PALMS—True elevation at national park service office on Twentynine Palms highway is officially determined as 2000.27 feet. This figure, inscribed on bronze-plaqued elevation bench mark placed by US geodetic surveyors, is the first official elevation set for this area. Clarence Symms was chief of the surveying party.

Backer of Prospectors Dies . . .

RANDSBURG—Dr. Rose LaMonte Burcham, first woman physician in California, backer of the discoverers of famed Yellow Aster mine here, and former practicing doctor in this area, died February 9 at age of 91 at her Alhambra home. While she was practicing medicine in San Bernardino in 1890s she grubstaked her husband C. A. Burcham, John Singleton and Fred Mooers, prospectors who discovered the Yellow Aster.

Palm Canyon Reopened . . .

PALM SPRINGS—Re opening of famed Palm canyon near here brought throng of visitors. Canyon now is open Sundays 9 a. m. to 6 p. m. Private parties who want to hike or ride in canyon on weekdays may obtain permits at office of William Veith, Palm Springs Indian agent, on Indian avenue. Strict rules are enforced to prevent fires. Positively no smoking is allowed.

• • •

Harry Bergman of Aguanga was elected president Imperial highway association, succeeding Willard H. Smith, Orange county supervisor.

New Bids on Coachella Canal . . .

INDIO—Low bid of \$1,660,681.90 for constructing 21-mile link All-American canal was submitted by J. F. Shea company, Los Angeles. The eleven bids were better than those submitted for same section (starting nine miles south of Mecca and ending near new power plant east of Indio) in October, 1941, at which time work was cancelled. Materials will be furnished by bureau of reclamation. Extension, it is estimated, will be capable of irrigating 11,000 acres of undeveloped land besides supplementing present cultivated areas.

• • •
Frank R. Givens, district ranger from Yosemite, is now acting custodian Joshua Tree national monument, replacing Duane Jacobs, called to the navy.

NEVADA

New Records for Boulder Dam . . .

BOULDER CITY—Boulder dam again has broken three records for power production, according to E. A. Moritz, director region three of bureau of reclamation. January production of 582,351,000 kilowatt hours exceeded by 8,144,000 previous monthly peak set in December, 1943. Record high for a single day was 21,531,000 kilowatt hours, January 28, 1944. New peak load record of 1,049,000 kilowatts was made December 30, 1943. Present rated capacity of plant is 952,300 kilowatts.

Basin States to Meet in July . . .

RENO—Representatives of seven Colorado river basin states will meet here July 20 to consider further developments on the river, following action at closing session of Salt Lake City meeting. Congressional appropriation of \$675,000 from Boulder dam power fund was requested for continued investigation of reclamation developments in the area.

University Branch Petitioned . . .

BOULDER CITY—First steps for establishment of a branch of state university have been taken here by American Association of University Women who have petitioned state board of regents to take proposal under advisement. Petition called for acquiring buildings and facilities of army post now known as Camp Williston upon relinquishment of this camp.

Wants to Kill Wild Burros . . .

LAS VEGAS—Application for permit to kill "wild unclaimed burros consuming forage on federal range" in Gold Butte area has been made by D. D. Marron to Clark county board of commissioners. Marron who has grazing permit reports burros are excessive and detrimental to stock watering facilities as well as to forage.

The Desert Trading Post

Classified advertising in this section costs five cents a word, \$1.00 minimum per issue—
Actually about 1½ cents per thousand readers.

MISCELLANEOUS

Wanted to Buy—Genuine pre-historic Indian obsidian arrowheads and spears. Lynn Cran dall, Box 697, Idaho Falls, Idaho.

FOR SALE—12 beautiful perfect prehistoric Indian arrowheads, \$1; 10 tiny perfect translucent chalcedony bird arrowheads, \$1; 10 perfect arrowheads from 10 different states, \$1; perfect stone tomahawk, \$1; 4 perfect spearheads, \$1; 5 stone net sinkers, \$1; 10 perfect stemmed fish scalers, \$1; 7 stone line sinkers, \$1; 4 perfect agate bird arrows, \$1; 5 perfect flint drills, \$1; 7 perfect flint awls, \$1; 10 beautiful round head stunning arrowheads, \$1; 4 fine perfect saw edged arrowheads, \$1; 4 fine perfect flying bird arrowheads, \$1; 4 fine perfect drill-pointed arrowheads, \$1; 4 fine perfect queer shaped arrowheads, \$1; 4 rare perfect double notched above a barbed stem base arrowheads, \$1; 5 perfect double notched above a stemmed base arrowheads, \$1; 12 small perfect knife blades of flint, \$1; rare shaped ceremonial flint, \$1; 3 flint chisels, \$1; 7 quartz crystals from graves, \$1; 10 arrowheads of ten different materials including petrified wood, \$1. All of the above 23 offers for \$20. Locations given on all. 100 good grade assorted arrowheads, \$3.00 prepaid. 100 all perfect translucent chalcedony arrowheads in pinkish, red, creamy white, etc., at \$10.00. 100 very fine mixed arrowheads all perfect showy colors and including many rare shapes and types such as drill pointed, double notched, saw edged, queer shapes, etc., location and name of types given, \$25.00 prepaid. List of thousands of other items free. Caddo Trading Post, Glenwood, Arkansas.

WRITERS: Send for Free Circular D-44 with Unified Sales Plan for placing your work. Otis Adelbert Kline, Literary Agent, Established 1923, 507 Fifth Ave., New York 17.

MUSEUM SUPPLIES WANTED: Anything suitable for museums. Rocks, Minerals, Fossils, Guns, Horns, Beadwork, Meteors. Catalogue 25c. Museum Supplies, 6601 Oshkosh, Chicago 31, Ill.

DO YOU PRIZE PERSONAL OPINIONS more than NATURE'S SUCCESS? Would you conform to Nature's IDEAS if you knew them? ADDRESS—BASIC RESEARCH LABORATORIES SYSTEM, 785 Lafayette Street, Denver 3, Colorado.

LIVESTOCK

KARAKULS producers of Persian Lamb fur are easy to raise and adapted to the desert which is their native home. For further information write Addis Kelley, 4637 E. 52 Place, Maywood, California.

"Karakul Fur Sheep—America's Great Livestock Opportunity—You can be a part of this fascinating business and have your Karakuls cared for in California, by experienced ranchers. Write for details, James Yoakam, National Distributor, 1128 No. Hill Ave., Pasadena, California."

REAL ESTATE

For Imperial Valley Farms—
W. E. HANCOCK
"The Farm Land Man"
Since 1914
EL CENTRO — — — CALIFORNIA

Good News for Fishermen . . .

CARSON CITY—Nevada fish and game commission has revealed plans to plant 500,000 more trout in state streams than were planted in 1943. Mrs. Esther Herman, secretary of the commission, has received orders already for 2,800,000 trout of three species.

• • • NEW MEXICO

Want Indian Citizenship Proof . . .

ALBUQUERQUE—Police blushed when they learned they were holding an Isleta Pueblo Indian woman for investigation as an "alien." Official report stated, "In questioning her it was learned she had no citizenship papers."

Spanish Professor to Aid Disney . . .

LAS VEGAS—Dr. Antonio Rebollo, Spanish department head at New Mexico Highlands university, has accepted invitation to serve as special consultant to Walt Disney in production of educational films for Latin America. Films are sponsored by office of co-ordinator of Inter-American affairs, Washington, D. C., to aid in teaching of literacy in Latin America. Special attention will be given Spanish-American phonetics.

ANSWERS TO QUIZ

Questions on page 28

- 1—Prof. Wm. P. Blake, geologist of Parke surveying party authorized by congress in 1853 to explore rail route from Mississippi river to Pacific ocean.
- 2—An American. The Navajo rendering of the Mexican version.
- 3—James Addison Reavis who by fantastic hoax ruled great Peralta land grant covering much of Arizona.
- 4—Archeologists. Refers to chronology built up as result of tree ring studies; used especially to determine dates of Indian ruins in Southwest.
- 5—These men are outstanding archeologists of the Southwest.
- 6—Agave desert.
- 7—Varieties and subvarieties number more than 200.
- 8—Summer of 1857.
- 9—You'd probably be thirsty so you would drink from these natural rock basins often filled with coarse gravel and sand.
- 10—Most generally between 85 and 120 inches annually.
- 11—Thomas L. Smith was known as "Pegleg."
- 12—Twenty-five days, schedule established by Butterfield Overland mail that year.
- 13—All belong to the pea family.
- 14—Clear reddish translucent form of quartz.
- 15—Introduced about 1540 by Coronado and the Conquistadores.
- 16—Apricot.
- 17—Walter Noble Burns.
- 18—George Parker.
- 19—Spanish-American religious sect.
- 20—Barstow.

Navajo Rejects to be Schooled . . .

FORT WINGATE—A special course has been started at the vocational school here for Navajo Indians who either have been rejected for induction or discharged because of educational deficiencies. Navajo tribal council last July had asked that the army either educate the Navajo when inducted or put them under Navajo-speaking officers.

Move to Give Indians Full Rights . . .

GALLUP—House Indian affairs committee in February was considering steps for making the Indian a full-fledged citizen. Chairman O'Connor (D., Mont.) said objectives should be a formula for disposing of claims against the government, elimination of duplication between Indian bureau and other government agencies, and evolution of means for freeing Indian from guardianship.

Camilo Has Lost His Sheep . . .

LAS CRUCES—Camilo Jaramillo has lost his sheep. Not only did he lose 250 sheep but his sheepherder partner as well. He told Sheriff Santos Ramirez the flock was brought from San Antonio to graze along the edge of the Rio Grande valley near here. He went to town for medicine and now cannot find the sheep or his partner. He said, "Too many roads down here."

• • •
Paul A. W. Walter, Santa Fe banker, has been re-elected president Historical Society of New Mexico, office he has held since 1926.

• • •
New Mexico Wool growers at 41st annual convention re-elected Floyd W. Lee of San Mateo to presidency for 15th time and voted to meet again in Albuquerque in 1945.

• • • UTAH

Soldiers See Snow, Not Sand . . .

CAMP KEARNS—Soldiers here, peering out from their barracks through icicles at the snow-blanketed country, are bewildered. "It says here" they are stationed in a desert area because average annual temperature is 75 degrees and humidity is low. But that's little consolation to the camp hospital patients gazing at frost-coated windows and watching engineers install air conditioning systems, which are to be ready April 1.

Utah Background for Films . . .

SALT LAKE CITY—At least six major Hollywood studios have scheduled 14 films to be made in Utah in 1944, according to Utah publicity head, Frank E. O'Brien. Each picture will average \$1,000,000, 12 will be filmed in technicolor. Following success of "My Friend Flicka," filmed in Utah in 1942, its sequel, "Son of Flicka," is one of the first to be made here this year.

Postwar Plans for Tourists . . .

SALT LAKE CITY—Rocky Mountain hotel association directors, meeting here in February, named among postwar plans the construction of new airport buildings and other structures to dramatize western ideas and utilize western materials to create greater tourist interest. "Most easterners," said President Lester W. Carter, Billings, Montana, "look upon the west as a summer playground. We must help them now to understand that our states have real attractions the year around. Our winter sports areas and big game hunting are hard to beat, just to mention a few attractions." Annual convention was set for late September in Estes Park, Colorado.

Sevier Fishing Postponed . . .

DELTA—Fishing along Sevier river and its tributaries from U. B. dam to Sevier lake sinks is prohibited until June 1, by order of state fish and game commission. Action was taken to protect new plantings of fish to be placed in river this spring. Catfish and German brown trout head list of proposed plantings. This order will postpone regular bass season opening from May 15 to June 1.

Penicillin for Livestock . . .

SALT LAKE CITY—Lieut. Col. F. E. Queen, Bushnell hospital, Brigham City, told Intermountain Livestock sanitary association at recent meet that the drug penicillin "has become so effective in a great number of types of human diseases, there is no reason why penicillin can't be used for animal diseases." He mentioned particularly streptococcus and staphylococcus infection and gas gangrene organisms, which are common among both humans and animals. At the meeting, Dr. F. H. Melvin, US bureau of animal industry, Salt Lake City, was elected president.

A WESTERN THRILL

"Courage," a remarkable oil painting 20x60 feet, the Covered Wagon Train crossing the desert in '68. Over a year in painting. On display (free) at Knott's Berry Place where the Boysenberry was introduced to the world and famous for fried chicken dinners with luscious Boysenberry pie.

You'll want (1) A 4-color picture of this huge painting suitable for framing. (2) A 36-page handsomely illustrated souvenir, pictures and original drawings, of Ghost Town Village and story of this roadside stand which grew to a \$600,000 annual business. (3) Two years subscription (12 numbers) to our illustrated bi-monthly magazine of the West. True tales of the days of gold, achievements of westerners today and courageous thoughts for days to come. Mention this paper and enclose one dollar for all three and get authentic western facts. Postpaid. GHOST TOWN NEWS, BUENA PARK, CALIF.

Mines and Mining . . .

Henderson, Nevada . . .

One hundred million pounds of magnesium, enough for 50 million incendiary fires in Berlin or Tokyo, had been produced at Basic magnesium plant here by February 10 it is reported. This amount is said to be more magnesium than total output of US for 27 years preceding March 1, 1942, and more magnesium than world production total for 1940.

San Francisco, California . . .

War production board, according to Associated Press release, urges mineral men in California, Idaho, Nevada and Arizona to be on lookout for major deposits of high quality mica needed especially for radio and electronic equipment. Record price of \$5 a pound plus \$1 bonus is being offered for the material, the report said.

Salt Lake City, Utah . . .

John M. Boutwell, Salt Lake consulting geologist, was installed as president Society of Economic Geologists in New York City February 23. At the meeting, Walter C. Mendenhall, director US geological survey, was awarded the RAF Penrose Jr. medal for meritorious research service.

Trona, California . . .

All-time high combined daily production of 1261 tons of potash salts, borax, soda ash, sodium sulphate bromine and lithium was made by American potash and chemical corporation during January. Scheduled for completion March 15 was \$125,000 addition to war-vital lithium concentrate plant, according to W. H. Allen, chief engineer. Also underway is construction of \$100,000 addition to technical boric acid plant.

Indio, California . . .

It was reported in February by Indio News that Iron Chief mine, northwest of Desert Center, had become the property of Henry J. Kaiser interests to supply ore for Kaiser steel plant at Fontana. Surveys of the "million-dollar property" which is said to include nearly 3000 acres, were completed last year by Southern Pacific. Development at that time was planned by Harlan H. Bradt of Pasadena, then owner of the property, but transportation problems were thought to be insurmountable.

Reno, Nevada . . .

Since Pearl Harbor 3644 prospectors have taken advantage of free assay service offered at University of Nevada's analytical mining laboratory in any 30-day period. Of the 8500 samples tested, 80 per cent of which were strategic metal ores, about 35 per cent had possible value and 16 per cent were "very good grade material." Most common were tungsten, mercury, manganese, copper, lead, zinc, antimony, fluorine, vanadium, iron and magnesium.

Los Angeles, California . . .

Howard Kegley, mining editor Los Angeles Times, has been elected to sixth term as president Mining Association of the Southwest. Other officers include H. W. Howe, vice-president; John Herman, second vice-president; B. M. Snyder, third vice-president, and Victor Hayek, secretary-treasurer.

Coaldale, Nevada . . .

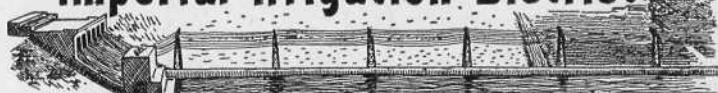
Further exploration of bituminous coal beds on Darns property near here is continuing by US bureau of mines, it is reportedly indicated by Glenn L. Allen, Nevada district engineer for the bureau. Nevada coal project has been under investigation for a number of months by engineers of mines bureau and US geological survey. Drilling will be done by R. S. McClintock, Spokane, Washington.

Achievement . . .

- On October 15, 1943, purchase of the electrical properties of the California Electric Power Company in Imperial Valley and the area in Coachella Valley destined to be served by the All-American Canal was completed, and Imperial Valley Irrigation District became the sole distributing agency for electrical energy in these areas.
- Thus was achieved a goal toward which the people of Imperial and Coachella Valleys have united their efforts for a quarter of a century. Full development of the power resources on the great All-American Canal now seems assured and both water and power will be put to the common usage of developing these two fertile reclaimed desert valleys.

SHARING THE BENEFITS OF WATER AND THE PROFITS OF POWER, IMPERIAL AND COACHELLA VALLEYS ARE IN TRUTH GOOD NEIGHBORS LINKED BY BONDS OF MUTUAL INTERESTS AND NECESSITIES.

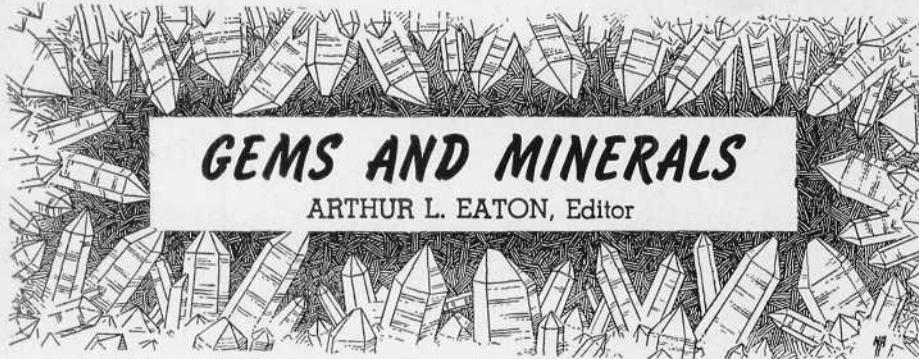
Imperial Irrigation District



Use Your Own Power-Make it Pay for the All American Canal

GEMS AND MINERALS

ARTHUR L. EATON, Editor



SOUTHWEST MINERAL SHOW WILL FEATURE COPPER

Seventh annual mineral and lapidary show will be staged by Southwest Mineralogists April 1 and 2, at Harvard Playground, 6120 South Denker avenue, Los Angeles. Hours on Saturday will be 1 p. m. to 10 p. m.; on Sunday from 1 p. m. to 8 p. m. Copper will be the featured mineral.

UTAH MINERAL GROUP OUTLINES YEAR'S WORK

Mineralogical Society of Utah elected the following 1944 officers: Dr. Junius Hayes, president; Marie Crane, first vice-president; W. T. Rodgers, second vice-president; Forace Green, secretary; Lillian Lockerbie, treasurer; S. P. Roach, historian.

Tentative program includes publication of four bulletins, a March birthday party and a fall party, an overnight field trip to a nearby point of interest in the summer, and the starting of a society library.

CODE FOR ROCKHOUNDS AT MINERAL DISPLAYS

Long Beach mineral news suggests the following rules of etiquette concerning displayed material:

1. Never pick up a piece of material unless it is handed to you by the owner.
2. Always handle carefully, as many specimens are valuable and cannot be replaced.
3. If you cannot see the specimen well, ask the owner to show it to you.

EAST AND WEST PECTOLITE SPECIMENS CONTRASTED

Specimens of pectolite from eastern sources, especially from New Jersey and other Atlantic coast localities, are quite different from those of the Pacific coast. Some from Patterson, New Jersey, show pectolite fans well developed and quite perfect needle crystals as white as snow. These crystals are loosely cemented together by nature, come apart easily, and are a real hazard to the fingers, as they penetrate the skin and annoy like cactus spines.

Pieces of pectolite taken from a large deposit near Jacumba, California, have well-developed, snow white fans and crystals, but are hard and compact, and the crystals can be separated from the mass only with difficulty. One of these specimens shows clearly six or seven inches in length instead of the usual one inch. A few specimens found in Imperial county, California, are still a third type. Their color is creamy yellow, the crystals are very coarse, and so compactly fastened together that many pieces have been cut and polished into fine cabochons as a substitute for jade. One ingenious cutter has dubbed it "chicken bone jade." Another western variety, the most compact of all, was taken from the valley of the Willamette river, in central Oregon. This type often has been found as small pieces in the river bed, each piece a complete fan, the crystals closely cemented together.

NEW MEMBERS WELCOMED BY ARIZONA MINERAL CLUB

Mineralogical Society of Arizona continues to add new members to its roster. Most recent additions are R. E. Walklin, Mrs. Colleen Bale, W. E. Brooks; Carl A. Walters, Wickenburg; Earl F. Ray, Glendale; Floyd R. Getsinger, Wm. Clay Parker and Harry Rehder of Phoenix; R. W. Thompson, Payson, and C. H. Robinson Sr., president Mineralogical Society of District of Columbia, Washington, D. C.

New junior members are: Rex Lattimore, Thomas Gwinn, Gordon Waterworth, John H. Hanny, all of Phoenix, and Jackie Walters, Wickenburg.

PICTORIAL STORY OF QUARTZ FEATURES ARIZONA EXHIBIT

Mineralogical Society of Arizona continued study of chemical characteristics at February meetings, speaker, Scott L. Norviel. Seven new members have joined since January 1, bringing the total to 139.

The society's aluminum exhibit in the chamber of commerce window has been replaced by a pictorial story of the processing of pizo-electric quartz for use in radio broadcasting. Half-tone illustrations, provided by August E. Miller of the Miller Laboratories, North Bergen, N. J., depict the major steps. Beginning with the first examination of mixed mine product for the detection of flaws and inclusions, the second step, by special equipment determines the crystallographic and optical properties. This is followed by slicing, grinding and polishing. The finished product is a thin wafer about the size of a postage stamp, of variable thickness depending on its particular use, measured in units of 1/25,000ths of an inch.

Quartz crystals of various sizes, including two excellent phantoms form the center of the exhibit. These are supplemented by semi-precious varieties of quartz cut cabochon and faceted and include a crystal bead necklace. Semi-precious varieties also are shown in the rough.

INTELLIGENT PROSPECTING REQUIRES FIELD TESTS

Prospectors would save themselves many difficulties and disappointments if they would equip themselves with a more exact knowledge, not merely of the two or three ores for which they usually search, but also of the many valuable ores and minerals which sometimes come to light.

One prospector came rushing in with samples of his latest discovery, greenish yellow "carnotite," a large vein of it. Simple tests soon punctured his balloon and spoiled his joy. His discovery was poor grade sulphur, which burned easily, and sent off strong sulphur fumes which settled the argument at once. This simple test could be performed anywhere over a common campfire. Every prospector should be able to perform as many simple field tests as possible.

COLORFUL MINERALS

GARNETS

Among the most colorful and interesting of all minerals is the garnet, or rather the great family of garnets. If one should ask the casual amateur to describe a garnet, he would describe a lustrous dark red stone. This best known garnet is the pyrope, deep red to black in color, a stone which still is sold by unscrupulous dealers as "cape ruby," "Arizona ruby," or "ruby garnet." Cut en cabochon, this stone was once sold as "carbuncle." The discovery of countless numbers of pyropes in Arizona and other states has robbed pyrope of most of its value but not of its interest.

But the dark red stone is not the only interesting garnet. Beautiful and valuable is the demantoid or green gem garnet. Rich emerald green in color, when cut facet and well polished, it rivals the finest emeralds in color, luster and beauty.

Essonite, hessonite, or cinnamon stone facet cuts into a fine cinnamon yellow to brown stone. Grossularite may be pale green, yellow, pale pink, orange or brown. Wilnite garnets vary from greenish yellow to greenish white. Topazolite is the color of fine topaz. Citrine, a variety of essonite, is lemon yellow. Almandine ranges through cherry red, blood red, violet and claret colors. Lime aluminum garnets are white, pale green, amber, honey, wine, yellow, brown and rose pink. There is wide variation in the names of the different varieties of garnets, but there is even greater variation in colors and types and crystal forms.

For Collectors - -

This month we are featuring some fine selections for collectors, some material which you should all be interested in.

1—CORTLAND CALCITE—This material is from Cortland, Arizona, and consists of nicely formed reddish calcite crystals, most with phantoms, making a nice contrast with dark matrix. One of these colorful specimens should be in every collection—75c, \$1.00, \$3.00, \$5.00. We also have some beautiful museum specimens of this material. Write for prices and description.

2—PYROPHYLITE—We have just received a nice shipment of fine Pyrophyllite groups, ranging in color from light green to purple, yellow, and grey. This is some of the nicest Pyrophyllite ever to come from the deposits at Indian Gulch, in Mariposa county, California. They are priced at—

2-inch—50c to 75c; 2x3—\$1.00 to \$2.00;
3x4—\$2.50 to \$3.50

These prices do not include postage.

We Buy Minerals of All Kinds

The West Coast Mineral Co.

Send for our Free Price List

BOX 331

LA HABRA, CALIF.

Near Taxco, Mexico, "the city which became a national park," there is a deep pit, which natives claim to be from a mile deep to bottomless. This pit has been the scene of countless murders, illegal executions, and crimes of all sorts. Mexican government scientists recently established the fact that the pit was little more than 500 feet deep, and ended its history of crime with dynamite.

GEM MART

INTRODUCTORY OFFER—One dollar each lot. Five all different Fluorescent Agates—polished. Thirty rough Mexican Opals. Fifty nice pieces Turquoise. Twenty different polishing specimens. Postage ten cents. Minerals and gems on approval. DR. RALPH MUELLER, Professional Building, Kansas City, Missouri.

AGATES, Jaspers, Opalized and Agatized woods, Thunder eggs, polka dot and other specimens. Three pound assortment \$1.50 postpaid. Glass floats, price list on request. Jay Ransom, 3852 Arboleda Ave., Pasadena 8, Calif.

20 mixed fossils for a dollar bill. 100 ancient Indian arrowheads \$3.00. 10 tiny bird arrowheads \$1.00. List Free. Lear Howell, Glenwood, Ark.

\$2.50 brings you prepaid six rare and beautiful crystallized Arizona minerals. Vanadinite, Diopside, Wulfenite, Willemite, Chrysocolla, Azurite. Specimens 1½x2 or larger. Wiener Mineral Co., Box 509, Tucson, Arizona.

100 Jewelry Stones removed from rings, etc., \$2.00. 12 articles of Antique Jewelry, rings, pins, etc., \$3.00. B. Lowe, Box 311, St. Louis, 1, Missouri.

Water Clear Quartz Crystals of the finest quality, single points from 5c to \$2.50 each. Clusters or groups from 25c to \$25.00 each. Beautiful Cabinet specimens at \$5.00, \$7.50 and \$10.00 each. Wholesale and retail. Satisfaction or money back guarantee. Delivery charges extra. Jim Davis, 303 Ward, Hot Springs, Arkansas.

Choice Palm Root—Full of eyes showing root and trunk structure. Very colorful. Sliced for Cabochons. 25 cents per square inch. Satisfaction guaranteed. GASKILL, 400 North Muscatel, San Gabriel, Calif.

Beautiful agate, flower jaspagite, picture jasper and dinosaur bone. Assorted lots of cutting material, gem quality, ten pound package \$10.00. Four pound package \$5.00. Send postage. Mrs. Richard Fischer, Box 555, Grand Junction, Colo.

THE ROCKHOUND COLONY GROWS—Fourteen lots sold to date and more coming, also six acres of back land for orchard. Send in a good name for colony and postoffice. We're going to have a colony we'll all be proud of. Ideal location—mild winters—cool summers—virgin collecting country and finest scenery. Lots cheap—\$150 for 100x300 ft. on U. S. 160. We need cutters, dealers, collectors, hobbyists, silversmiths, etc. Also plenty in other lines of business, especially a good tourist court with at least 16 cottages, because those who have bought lots will want a place to live while they build. Many more are intending to come and buy and when the tourist trade starts this will be one of the best locations in the country. All interested write to The Colorado Gem Co., Bayfield, Colo.

Due to restrictions of the office of war information, figures on the 1942 production of mercury in California are just released. The total output of 18 counties was 30,087 flasks (76 pounds each) valued at \$5,553,357. This is the largest annual value of quicksilver in the past 92 years in which records have been kept and the largest amount since 1896. California produces 59 per cent of the national yield.

ADVERTISING RATE 5c a Word — Minimum \$1.00

INDIAN RELICS, Curios, Coins, Minerals, Books, Old Buttons, Old Glass, Old West Phoros, Weapons, Catalog 5c. Lemley Antique Store, Osborne, Kansas.

ROCK COLLECTORS, ATTENTION! — A COLORFUL COLLECTION — 5 slabs Cuttables, \$1.00; Sky Blue Fluorite Xls., \$1.00; Azur-Malachite, \$1.00; Chalcanthite, \$1.00; Amethyst Phantom XI., \$1.00; Iron Pyrite and Qtz. XI. group, \$2.50. Realgar & Orpiment Xls. on Calcite, \$2.00; Purple Dumortierite Radiating Xls., \$1.00; White Aragonite Stalactites, \$1.00; Silky Asbestos, \$1.00; Vanadinite Xls., \$1.00. Free polished specimen. All the above postpaid \$8.00. December offer still good. The Rockologist (Chuckwalla Slim), Paradise Trailer Court, 627 E. Garvey Blvd., Garvey, Calif.

Worm bored Petrified Wood, \$1.00 per pound. Dinosaur Bone, 50c and \$1.00 per lb., plus postage. Bill Little Gem Cutting, Hesperus, Colorado.

1 x 1 specimens, silver, lead, copper, zinc. All different. 10 specimens for \$3.00. Jack the Rockhound, P. O. Box 86, Carbondale, Colo.

50 Genuine and Synthetic slightly damaged stones assorted \$7.50. Genuine Zircons blue or white 3 for \$3.75. Twelve genuine Cameos or Opals \$2.50. B. Lowe, Box 311, St. Louis, 1, Missouri.

Minerals, Fossils, Gems, Stamps, Coins, Pistols, Glass, Bills, Indian Relics, Bead Work. Catalogue 5c. Vernon D. Lemley Curio Store, Las Cruces, New Mexico.

Montana Moss Agates in the rough for gem cutting \$1.00 per lb. plus postage. ELLIOTT'S GEM SHOP. Petrified Picture Wood and Moss Agate Jewelry Hand Made in Sterling Silver Mountings—Rings, Bracelets, Necklaces, Brooches, Tie Slides, etc. Mail orders filled anywhere in U.S.A. 26 Jergins Arcade, Long Beach 2, Calif.

Agate Jewelry and Oregon Agates: One dollar with ten cents for postage brings you four sawed moss agate slabs in excess of ½ inch by ¾ inch for making cabochons or ring sets. These are quality. E. Lee Sigfrid, 211 Congress, Bend, Oregon.

Swisher Rocks and Minerals, also Corals, Shells, Statues, etc. We also buy mineral species and woods. Must be good. Swishers, 5254 So. Broadway, Los Angeles 37, Calif.

Gem Jasper from Indian Ridge, Ohio. Beautiful pastel colors. Makes lovely cabochons; 2 ounces rough for only 25c, or \$1.50 per lb., postpaid. Lake Superior Agates 10c each and up. Wyoming Jade, gem quality, slabs of all kinds. Send for list. James W. Riley, RR. 2, Springfield, Ohio.

Tourmaline matrix, in quartz crystals, \$1.00 to \$30.00, tourmaline pencils, 50c to \$5.00, Esonite garnet-green-clusters, 50c to \$3.00, unique specimens. Sagenite agate, \$1.00 to \$4.00, specimen rough nodules. Gem list 10c. Return specimens if not satisfactory. The Desert Rats Nest, 2667 E. Colorado St., East Pasadena, Calif.

AMONG THE ROCK HUNTERS

Mr. and Mrs. Ray Carce, president and secretary-treasurer of Mojave mineral society, are owners of a scheelite mine. The group recently enjoyed a field trip to the mine.

Clarence Cullimore, Bakersfield architect, discussed modern adobe construction for Kern county mineral society. He described the proper material and its preparation for use in building homes that will stand up in California climate.

Popular Hobbies, Box 710, Los Angeles 53, offers half price rates to send copies of the weekly paper to USO reading room, military hospital or army camp library.

Imperial Valley gem and mineral society received a box of good quality trade specimens from Queen's society, Jamaica, New York.

Many persons not otherwise interested in minerals would do well to learn something of the minerals found in their own neighborhood, if only to protect themselves from ridicule. A lady, name unknown, was looking at a group of crystals in a showcase. "What's that long square crystal?" she asked. When informed that it was kernite, chief source of borax, and that it had been one of the main sources of wealth of Kern county, California, since 1926, she exclaimed, "I don't believe it! I've lived in Kern county for a good many years and I never heard of it!"

Rocky mountain federation of mineral societies declines to be bombed out of existence by war conditions. There are now six active and cooperative units, with a prospect of four new members.

Grace and Frank Morse, Bayfield, Colorado, report that their rockhound colony is growing satisfactorily and that collectors all over the country seem to be adding to their specimens by trade and purchase in lieu of field trips.

February Rockhound record, publication of Mineralogical Society of Arizona, discusses beryllium, stating that its most outstanding characteristic is its lightness—specific gravity 1.84. Next in importance are the properties imparted to copper when alloyed with less than 3 per cent beryllium. Copper so treated has a tensile strength of 70,000 pounds per square inch in the annealed or soft state. When cold rolled and heat treated it increases to 190,000 pounds. Copper-beryllium alloy can be flexed 15 billion times, the best phosphor bronze only 400,000.

The Rockpile, monthly leaflet of East Bay mineral society, has a department compiled by L. S. Chapman called What is your mineralogical IQ? Three questions are propounded each month and the previous months' answered.

New Jersey mineralogical society held a special combined meeting with Plainfield engineers club February 1. L. Wiegel of RCA laboratories, Princeton, New Jersey, spoke on properties and uses of synthetic luminescent minerals.

Walter W. Bradley, California state mineralogist, announces that bulletin 123 dealing with American mining law now is available for \$5.00 per copy (13c tax in California) at the Ferry building, San Francisco 11, at State building, Los Angeles 12, and State office building No. 1, Sacramento 14. The bulletin, written by A. H. Ricketts, has been revised and a much detailed cross-referenced index prepared.

The festive and lucrative annual '49er party netted Searles Lake gem and mineral society \$940 which was turned over to the Trona committee for Victory to be divided among service and charity organizations. Each of the five Scout troops of Trona received \$50.00.

Fifth in a series of mineral maps of California dealing with manganese is now available for 60¢ at state division of mines, Ferry building, San Francisco 11, California. The other four maps are (1) quicksilver, (2) oil and gas (3) chromite, (4) tungsten.

Jesse Hardman displayed east coast minerals for Long Beach mineralogical society at the January session. Members enjoyed seeing rocks from east of the Rockies.

Wayne Durston talked on days in Bumpas Hell at February 11 meeting of Long Beach mineralogical society. Mr. Durston is a former naturalist ranger of Lassen national park and knows many facts about present day volcanic activity. Members displayed their favorite specimens of rough and polished petrified wood.

Henri Withington, recently returned from a two months' sojourn in Mexico, spoke on the Paricutin volcano at February 16 meeting of Searles Lake gem and mineral society.

Dr. George D. Louderback lectured on the geological history of San Francisco bay at February 3rd meeting of East Bay mineral society. Dr. Louderback has made a study of the bay region since 1913. R. O. Diedrick talked on minerals of California, February 17. He presented a comprehensive list and display of new minerals found in California and information on what minerals can be found in the East Bay region.

Friends of Mrs. Mary J. Curry, member of Modesto mineral club, will be saddened to learn of her death January 21, 1944. Sympathy is extended to her husband, T. K. Curry of Modesto, and to her son, Pvt. Charles R. Curry, Camp Polk, La.

John Fox sr. lectures on geology at Trona unified school every second Tuesday.

Searles Lake field trip committee members appointed for the year are Harvey Eastman, William Hunter, Ralph Merrill, John Pillott and Ceacel Wittorff. First trip planned is to onyx and gem deposits in Shepard canyon in north Argus range.

W. Scott Lewis, 2500 N. Beachwood drive, Hollywood 28, California, reports that he has obtained a limited supply of witherite (barium carbonate) from El Portal near Yosemite. Witherite is used in making plate glass and optical glass, as an enamel for iron and steel and as a pigment in the manufacture of barium salts.

Orange Belt mineralogical society met for a covered dish dinner February 3 at the home of Mr. and Mrs. I. V. Graham in San Bernardino. Program subject was precious metals. J. C. Filer talked on silver, R. H. Eells, president of the group, read a bulletin on platinum and Verne L. McMinn spoke on legendary lost gold mines.

Kenneth B. Garner, secretary of California federation of mineralogical societies attended February meeting of Orange Belt mineralogical society. He gave a brief talk on his experiences in the service and his visits to Michigan mineralogical society.

Roy Wagner gave specimens for a grab bag to increase Long Beach society's finances. Ralph Hock donated mineral hammers to be sold. Milo Potter constructed an oxcart to be loaded with donated specimens and raffled.

Los Angeles mineralogical society invited Long Beach group to attend their meetings third Thursdays at Boos Brothers cafeteria, 530 So. Hill, 6:30 p. m.

James H. Hance spoke on the effect of cold weather on mineralogy and geology of interior Alaska at February 1st meeting of Mineralogical Society of Utah. Mr. Hance is former dean of the school of mines, University of Alaska, Fairbanks.

At regular meeting of Grand Junction mineralogical society February 7, R. M. Porter showed colored slides of scenic spots and mineral locations on western slope of Colorado Rockies and interior views of natural history museum of Denver. Dr. R. P. Fischer of U. S. geological survey talked on uranium and vanadium mining at February 21 meeting.

Alexei P. Maradudin, member of American metals society, talked on metals in the petroleum industry at February 17 meeting of Los Angeles mineralogical society.

Pacific mineralogist for January discusses luster, defined as the appearance of the surface of a mineral in reflected light.

Officers of Pacific Mineral society, Los Angeles, for 1944 are: William C. Oke, president; C. C. Brunk, first vice-president; M. C. Nichols, second vice-president; Ruth Nichols, secretary-treasurer; Harold E. Eales, field trip chairman; R. H. Milligan and R. J. H. Mitwer, board of directors.

Mineral Science club of Little Rock, Arkansas, was formed January 25. Lewis B. Pringle is president of the new organization.

THE ROCK HOUND TAKES A WAR JOB

By CHAS. G. SCHWEITZER
Los Angeles, California

My canteen is empty and covered with dust,
My sturdy rock hammer shows traces of rust;
With cobwebs, my knapsack hangs limp on the wall,

My battered old flivver awaits a vain call.
I've taken a job to help with the war,
The desert will see me on week ends no more.
There's a job to be done,
And the sooner it's done,
The sooner I go to the desert.

I now use a hammer that goes rat-a-tat,
Instead of sombrero, I wear a tin hat;
I feel just as tired when day's work is done
As when I dug nodules all day in the sun.
But at night I can dream of the desert so free,
Of the nights where the millions of stars beckon me.

I hear the bright crackle of brush on the fire,
And swish of the wind like the notes of a lyre.
But what is that odor that breaks thru my dreams?

Aroma of coffee and bacon it seems.
And then a sweet voice calling, "Time to get up.
There's eggs on the platter and coffee in cup."
So thus there begins another work day,
For now it's all work and no time to play.
'Cause the job must be done,
And the sooner it's done,
The sooner I go to the desert.

Cogitations . . .

Of a Rockhound

By LOUISE EATON

Sum rockhounds is jus nacherly luckey n' it's not to be wundered at that they gets envied. Th' fortunate wunz now is those that has bizness that takes um to th' desert r'mountains where therz Rox. Bee men fer instans has to travel in the desert to tend their colonies. If yu number sutch amongst your frends maybe sum week end yu can help um rob beez-n incidentally look f'r specimens.

There will be more butiful desert flourz this season than f' many springs past, but they'll just hafto waste their fragrants on th desert air till gas 'n tires becum plentiful.

Is there any place besidz th desert where yu can have a rainbow without havin rain? That has happened here several timz recently. Uv course sum place musta had moisture, but at least three sunshiny days have been climaxed by rainbow iridescence on cloud banks in eastern skies.

OPAL SHOWS GRADUAL CHANGE OF COLOR

Persons who are superstitious about opals would seem to find some foundation for their fears in one stone which has been in the possession of the writer for 20 or more years. This stone, when found originally and polished, was a perfectly colorless, water-clear hyalite opal with a small amount of matrix, of the type common in Queretaro, Mexico.

As the years have passed, this stone, which weighs about 30 carats, slowly changed color, first to milky white, then to pale orange, and now is beginning to show faint but rather beautiful play of color. Instead of superstition, these stones should arouse deep scientific interest.

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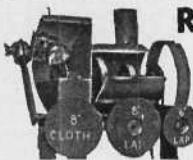
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AMATEUR GEM CUTTER

and polishing equipment. Lelande Quick, who conducts this department, is former president of the Los Angeles Lapidary society. He will be glad to answer questions in connection with your lapidary work. Queries should be addressed to Desert Magazine, El Centro, California.

By LELANDE QUICK

The mail brings me many interesting and encouraging letters and some times a legitimate "beef," which is as it should be, but not for a long time have I received such an interesting and encouraging letter as came recently from Mrs. Bacheller of Willcox, Arizona. All her life she has been collecting rocks and her boy, now in the navy, has collected too. Now she wants to cut and polish but she has no electricity. She says, "I have a gasoline motor on my washing machine and there's always plenty of wind." Mr. Bacheller is a mechanic and could work out something for her if some reader could furnish an idea. I suggested getting an old-time sewing machine and beginning from there, using foot power like the Chinese who produce the most intricate lapidary items in the world without electricity.

Surely this problem will stimulate the thinking and ingenuity of some readers and someone will solve it. Somewhere there must be shops with no electric motors. If ideas are offered me I will include them in future columns and perhaps this will open up a new world to many who must be situated like Mrs. Bacheller.

She comes from New Jersey and being from there myself I was greatly interested in her tales of finding "diamonds" on the beach at Cape May. She says they are pink and are sold as jewelry at Cape May but I never heard of them and I have never seen one in a collection. In fact I have never heard of any gem material being found on Atlantic beaches with the exception of Florida coral and I would like to hear of any eastern beach materials.

W. Ford Lehman of San Diego asks if stannic oxide (reagent quality) is all right for gem polishing. It costs about half as much as the chemically pure (CP) grade when you can get it and it is just as efficient for gem polishing purposes. All tin oxide is increasingly difficult to get and many substitutes have been tried as polishing agents but I have yet to hear of one that's "just as good." Has any reader found anything? Lehman also asks if aluminum laps are any good. I doubt it, but has anyone had experience with such a lap?

Another letter, from Fred Salfisberg of Cheyenne, Wyoming, asks if there is a mask available for the prevention of silicosis. I have never seen any offered for sale and while I have talked with friends who were aware of contracting that disease through gem grinding, and intended to do something about it, they have not done so because no masks seemed to be available. Certainly anyone with a predisposition to lung disease or with a history of it in the family should be cautious about inhaling dust from gem grinding. Will some physician reader offer something about the danger of silicosis and some dealer advice about the masks?

There are several questions I would like answered by readers in the foregoing paragraphs. That is the purpose of this column—to unselfishly exchange information of help to all gem cutters. Will you generously answer my call of "help!"

Commercial gem materials still are being produced in the United States. One Nevada mine yielded 13,000 pounds of turquoise in 1942 valued at \$32,000—but try to buy any at \$2.50 a pound or even at double that figure! In fact, try to buy ANY. \$47,000 worth of sapphires

This page of Desert Magazine is for those who have, or aspire to have, their own gem cutting and polishing equipment. Lelande Quick, who conducts this department, is former president of the Los Angeles Lapidary society. He will be glad to answer questions in connection with your lapidary work. Queries should be addressed to Desert Magazine, El Centro, California.

were mined in Montana. However, the mining of gem materials in these times, particularly for jewelry purposes, has declined almost to the vanishing point.

Things seem to be easing on the supply front. Diamond saw blades are easily procurable and saws are beginning to appear again. Carborundum wheels in lapidary grades are available and it appears that all supplies with the exception of tin oxide may be had by spring. If you have postponed building a shop or enlarging one because of the supply shortage you can get busy again and query your favorite dealer as to your needs.

And speaking of the dealer, has the thought occurred to you that they have all survived? Last month's issue of "Rocks and Minerals" carried more dealer advertising than any issue before the war. Despite lack of new materials and lapidary machinery, requirements of the armed services for the personnel of dealer firms, etc., they all have managed to weather through so far. The amateur lapidary needs the dealer always. He should be supported now.

LAPIDARY HELPS AND HINTS . . .

Very favorable results are being reported on the use of Aerosol O.T. for use in diamond saws instead of the kerosene-lubricating oil solutions generally used. This was first outlined by J. G. Ennes in January, 1944, "Mineralogist." Buy Aerosol from laboratory supply houses or pay more at photographic supply stores. An ounce will last a long time, will make 56 gallons of solution. For stock solution mix 1 ounce Aerosol O.T. with 8½ ounces of cold water and ½ ounce of wood alcohol. It dissolves slowly. For general use add 20 drops of stock solution to each quart of water. There will be no rust and you will eliminate the mess of using oil. But remember, water evaporates, so replenish the saw frequently. And remember again, if you continue to use oil, cut it 50 per cent with kerosene to avoid oily specimens.

To tell natural glass (obsidian) from artificial glass, test with a blow torch.

Manufactured glass will shatter and flow the instant it gets red. Obsidian will not shatter and has a delayed flow.

Obsidian nearly always contains bubbles, oblong in shape because of flow. Glass seldom contains bubbles, and when they do they are round.

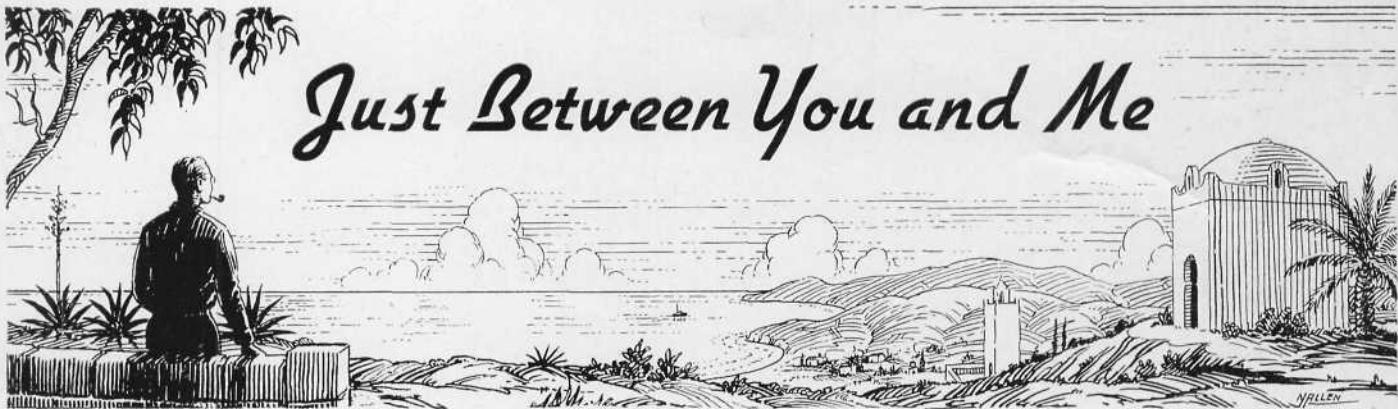
Obsidian often contains flow lines, glass seldom does as that would make it poor grade.

Obsidian has no odor when polishing dry, glass usually smells because of chemical constituents.

Obsidian always is glass but glass is not obsidian.

DID YOU KNOW . . .

- For a long time jet was believed to be black amber. It is a hard form of coal originally mined near the Ganges river in Lycia. Fragments were called "gagets" which was shortened to jet.
- The largest piece of amber on record weighed 18 pounds.
- No two pieces of amber are ever alike.



Just Between You and Me

By RANDALL HENDERSON

WITH THE ALLIED FORCES IN NORTH AFRICA—In the army, one is never quite sure what tomorrow will bring. But if plans go according to schedule, before this issue of Desert Magazine goes to press I will be on duty at a little Air Corps station out in the middle of the Sahara. Which means that I am one of those lucky soldiers who finally got the assignment he wanted more than all others.

It worked out this way: In September, 1942, when I learned that as a reserve officer I was to be called back to active duty, I put in a request for desert service in Africa. However, it takes time for action in such matters and my first assignment was to Hobbs Field, New Mexico, for work in air operations. When I arrived at Hobbs, the camp newspaper was floundering, and they named me Public Relations officer with the re-organization of the Hobbs Bomb-Blast as my first duty.

Six weeks later I was ordered to Washington to be briefed for overseas duty. Again I asked for a desert assignment, and was sent to Africa so the way would be open for the granting of this request. However, when I reached headquarters in central Africa, they were in need of a Special Services officer to handle problems of morale. And that became my assignment.

Six months later the opportunity came for a transfer, and since it was a move in the direction of the desert, I was glad to accept it. But all I got to see of the Sahara was from 9,000 feet as we flew over it, with one 30-minute stop along the way. My new assignment turned out to be in the liaison office of a headquarters on the shore of the Mediterranean, in one of Africa's largest cities. And that is where I have been the past six months.

These assignments all have been interesting, and I would not have changed them if I could, but will confess there was an extra feeling of elation yesterday when the teletype brought orders for me to report to a detachment camped near a little oasis in the heart of the vast expanse of sand and sun and solitude that covers most of north Africa. It is a refueling station on one of the main transport routes for planes that have crossed the south Atlantic and are headed for the front.

And so, if all goes well, the next copy for Desert will be written on the Sahara, by a California desert rat who after 17 months in the army has received just the assignment he wanted. From the standpoint of the Desert Magazine family, I am not sure that my copy will be any more readable—but I assure you it will be much easier to write in that atmosphere. I have lived on the desert too many years to feel at ease in the city.

* * *

A letter just arrived from Rand who is on the other side of the world with the marines. Shortly after his December contribution was sent to Desert Magazine, his outfit embarked for Tarawa where he was in one of the toughest battles of the war. He writes: 'Physically I am whole and healthy, but my philosophy is rather shattered. I can't put it together again, but I am at work building up a newer and more rugged one.'

No one but a parent, with a son overseas, will know how grate-

ful I was for that letter. I am not worrying about the philosophy. One day this war will be over, and if he and I are privileged to sit by a campfire again in some remote arroyo or canyon, as we have done many evenings in the past, that problem will solve itself. One of the tragedies of war is the devastating effect on man's sense of values. The Great Spirit of the desert has a tonic for that kind of affliction.

* * *

When the war is over and we all return to our peacetime jobs, Reg Manning of Phoenix and Hal Empie of Duncan are going to have to move over and make room for another famous Arizona cartoonist.

Among the home-coming soldiers will be Sergeant Bill Mauldin—and if you ask any American who reads the North African edition of Stars and Stripes, he will tell you that next to Ernie Pyle's Roving Reporter column, Mauldin's cartoons of life on the front are the most popular feature in the American soldiers' daily newspaper.

Sgt. Bill is a true son of the desert Southwest. He was born in Mountain Park, New Mexico, was graduated from Phoenix high school, and his wife and baby son are living there now. Mauldin spends part of his time in the foxholes at the front, and his cartoons carry the same grim reality that Ernie Pyle puts into words. His leading character is dirty and unshaven and in deadly earnest. He looks, as Pyle expresses it, "exactly like a doughfoot who has been in the lines for two months. And that isn't very pretty."

Like all other men in the service, Mauldin wants to get this war job finished and go home. And if he has his way, his home always will be in the Southwest.

* * *

Books are not plentiful over here, but one of my friends recently loaned me a copy of *They Also Ran*, Irving Stone's story of the 19 men in history who were defeated for the presidency. Discussing the abilities of President Grant and President Harding, whom the author considers two of the most reactionary and incompetent executives ever to be elected to the high office, he points out that both of them were elected "in the lethargy following major wars."

Stone then poses the question: "Will this same lethargy follow World War II?"

Many of the men in the service are asking the same question. The reports that come to us regarding domestic affairs in USA are not reassuring. The long controversy in congress over the question of votes for the soldiers has been disgusting. The Democratic party appears to be hopelessly divided, the Republicans more interested in success at the polls than in constructive plans for the post-war period. From this distance it is not a bright prospect. Fortunately, the men in uniform overseas are more interested just now in winning the war than in politics at home.

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